Attachment A

PROJECT MANUAL

for construction of interiors for

The House of Representatives Gift Shop

Washington, DC

Prepared by

Gensler
2020 K Street NW
Washington, DC 20006

12/31/05
Project Number 09.5025.000

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SECTION 01100 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. This Section addresses:

1. Work covered by Contract Documents.
2. Special insurance.
3. Codes and Standards.
4. Work by others under other contracts.
5. Owner furnished products.

B. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to all Sections. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all.

C. Conflicts or discrepancies among the Contract Documents shall be resolved in the following order of priority:

1. Amendments and revisions (such as Change Orders) of later date take precedence over those of earlier date;
2. the Agreement;
3. the Supplementary Conditions;
4. The General Conditions;
5. Drawings and Specifications; Drawings govern Specifications for quantity and location. Specifications govern Drawings for quality and performance. In the event of ambiguity or conflicts, the greater quantity and the better quality shall govern.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The complete construction of tenant improvements for United States House of Representatives Chief of Administrative Offices.

1. Project Location: Ford House Office Building, Room 359, Washington , DC 20515.
2. Owner: Ford House Office Building, Room 359, Washington, DC 20515.

B. Contractor: The Architect of the Capital. has been engaged as Contractor for this Project.

1.3 SPECIAL INSURANCE

A. Contractor’s Commercial General Liability insurance shall contain no exclusion that would deny coverage for any claim arising out of or contributed to by any fungus, mildew, mold, or resulting allergens. If such exclusion exists and cannot be removed by endorsement, Contractor shall submit proof of coverage for fungus, mildew, mold, or resulting allergens under a Pollution Legal Liability or Contractor’s Pollution Liability policy.

1.4 CODES AND STANDARDS

A. All references to codes, specifications and standards referred to in the Contract Documents shall mean, and are intended to be, the latest edition, amendment or revision of such reference standard in effect as of the date of these Contract Documents. In addition to the codes, specifications and standards referred to in the Contract Documents all work provided under this Contract shall comply with the applicable provisions of the following, where standards conflict the more stringent shall apply:
1. Building:
2. Electrical:
3. Fire:
4. Mechanical:
5. Plumbing:
6. Disabled:
7. Utility Company requirements.

1.5 PERMITS

A. Contractor shall secure and pay for all permits and governmental fees, licenses and inspections necessary for the proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required.

B. If required by governmental authority, Owner will make application for permits and licenses using forms obtained and prepared by the Contractor and with all costs paid by the Contractor.

1.6 TAXES

A. Contractor shall pay all sales, consumer, use and other similar taxes for the Work or portions thereof provided by the Contractor which are legally enacted at the time Bids are received, whether or not yet effective.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01100
01100/9-98/ttt

SECTION 01101 - REQUESTS FOR INFORMATION (RFI'S)

PART 1 GENERAL

1.1 REQUEST(S) FOR INFORMATION (RFI'S)

A. General: A Request for Information (RFI) is a Contractor initiated, Architect formatted, written instrument related to the execution of the Work that is addressed to the Architect. The RFI shall be used by the Contractor as the means for it to ask questions related to the Work; subject to the conditions contained within this article.

1. An RFI which fails to conform to the requirements stated herein, (i.e, is incomplete or contains numerous errors) shall be returned to the Contractor for its completion/rectification without benefit of the Architect's response, in addition, no adjustments for Contract Time or Contract Sum shall be granted for an RFI failing to conform to the requirements stated herein.

2. The Owner reserves the right to assess the Contractor for the cost (based on time and materials) of an RFI response performed by the Architect, and any of it's consultants, which is deemed by the Owner and the Architect as being frivolous or unnecessary (i.e.; the subject of the RFI is addressed in the Contract Documents). Such RFI's shall be removed from the RFI log.

3. Each RFI shall be submitted with such promptness as to cause no delay in the Contractor's own work and in that of any subcontractor. No adjustments of Contract Time or Contract Sum will be granted because of failure to have an RFI submitted with sufficient time to allow for the orderly processing of a response by the Architect.

B. Authorship:

1. Prior to the commencement of the RFI process, the Contractor shall designate a full time "RFI Manager" whose duties shall include the responsibility for enforcing the Request for Information provisions of this article, to maintain an up-to-date log of all RFI's, advise the Architect, in writing, of the status and disposition of all RFI's at the progress meetings, and be a member of the Contractor's staff. The RFI Manager shall be experienced in administration and supervision of building construction of the type indicated on the contract documents including mechanical and electrical work.

2. Each RFI shall originate solely from the Contractor's RFI Manager. An RFI submitted to the Architect by an entity, or individual, other than the RFI Manager shall be returned to the Contractor.

C. Prohibitions: RFI's shall not be used for the following:

1. To solicit consideration by the Architect of a "substitution".

2. To request an adjustment of the Contract time. If the Contractor believes that the response received from the Architect to any RFI warrants adjustment to the Contract time

it shall immediately advise the Architect, in writing, upon receipt of the Architect's response.

3. To request an adjustment of the Contract sum. If the Contractor believes that the response received from the Architect to any RFI warrants adjustment of the Contract sum it shall immediately advise the Architect, in writing, upon receipt of the Architect's response.

4. To solicit comment clarification(s) of any required submittal or shop drawing review that was transmitted by the Architect to the Contractor.

5. RFI's shall not be used to transfer coordination responsibility from the Contractor to the Owner or the Architect.

D. Procedure:

1. The Contractor shall submit all RFI's on the form supplied by the Architect.

2. Each blank on the RFI form shall be filled in.

3. Each RFI shall be typewritten and shall be forwarded to the Architect in triplicate. Each RFI shall address one subject.

4. Each RFI shall contain specific reference to the drawing number(s), detail number(s), schedule type(s), bulletin number(s), specification section(s) and paragraph number(s), or other related document(s) which is (are) pertinent to the Contractor's question. The date of each referenced drawing number, bulletin, specification section or other related document shall be identified. In preparing each RFI verify the applicable dimension(s), field conditions, drawing requirements (small through large scale details), and/or specification section requirements pertaining thereto. Prior to submission of the RFI coordinate the nature of the inquiry with the requirements of other sections or trades as related thereto and responses to previous RFI's. Where supplementary sketches are required to clarify an inquiry the Contractor shall attach supplementary sketches, at large scale, illustrative of the inquiry. Sketches shall include sufficient detail, materials, dimensions, thicknesses, assembly, attachments, relation to adjoining work, structural grid references, and all other pertinent data and information for the Architect to make an informed response.

a. The Contractor is encouraged to suggest solution(s) to its inquiries, if applicable. Should the Contractor's solution(s) have an impact on Contract Sum or Contract time it shall be so stated within the RFI.

5. Each RFI shall be dated and sequentially numbered.

6. Each RFI shall be reviewed, and signed, by the RFI Manager prior to transmitting to the Architect.

7. Duration of RFI Response Upon Receipt: 5 business days.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION 01101

SECTION 01140 - WORK RESTRICTIONS

PART 1 - GENERAL

1.1 USE OF PREMISES

A. Access: At all times, provide the Architect and the Owner's representatives, easy and safe access to the Work wherever it is in preparation and progress. Provide such access so Architect may perform its functions.

B. Use of Site: Confine operations at the site to areas permitted by law, ordinances, permits, and the Contract Documents and do not unreasonably encumber the Site with any materials or equipment.

C. Landlord's or Property Manager's Rules: Conform at all times to the Landlord's and Property Manager's requirements for protection of plant, materials, equipment, and noise levels. A copy of the Landlord's or Property Manager's rules (tenant work letter or lease requirements) will be furnished upon written request from the Owner.

D. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

1. Schedule deliveries to minimize use of driveways and entrances.
2. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.2 OCCUPANCY REQUIREMENTS DURING CONSTRUCTION

A. Full Owner Occupancy: Owner will occupy the site during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations.

1. Schedule use of premises for Work and coordinate construction operations with the Owner to allow for Owner occupancy.
2. Schedule use of premises for Work and coordinate construction operations with the Owner to allow for use of site and premises by the public.
3. Perform the Work during normal business hours only upon approval of the Owner.
4. Perform demolition work after business hours or at such times as approved by Owner. Demolition work includes, but is not limited to, sprinkler work, concrete saw cutting, spray painting, hammering, nailing, and similar work, which may cause noise, dust, or odors, thereby disturbing occupants.
5. Keep premises orderly, clean and with a minimum of obstruction and inconvenience to the tenants and the public.
6. Limit use of site to areas designated unless otherwise allowed by Owner in writing.
7. Relocate any stored products that interfere with public access, operations of the Owner or separate contractor. If necessary, obtain and pay for additional storage or work areas needed for operations.

1.3 OCCUPANCY REQUIREMENTS PRIOR TO SUBSTANTIAL COMPLETION

A. Partial Owner Occupancy: Owner reserves the right to occupy and to place and install equipment in completed areas of the site, before Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and partial occupancy shall not constitute acceptance of incomplete portions of the Work, nor shall it relieve the Contractor of its responsibility for completion of the Work in accordance with the Contract Documents.

1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied before Owner occupancy.
2. Obtain a Certificate of Occupancy from authorities having jurisdiction before Owner occupancy.
3. Before partial Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will provide, operate, and maintain mechanical and electrical systems serving occupied portions of the site.
4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of the site.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01140
01140/9-98/ttt

SECTION 01230 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

A. Alternate: An amount proposed for certain work that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project. Amount of alternate prices shall include cost of coordination, cost of overhead and profit, and cost of modifications or adjustments to adjacent work due to integration of alternate.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A Schedule of Alternates is included in Part 3 below. Specification Sections contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

NOT USED

END OF SECTION 01230

SECTION 01250 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

1.2 MINOR CHANGES IN THE WORK

A. Architect may issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on form included at end of Part 3.

1.3 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
2. Within 5 days unless otherwise provided in the General Conditions after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

    a. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    b. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Proposals (Change Order Requests): If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
3. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
4. Comply with requirements in Division 1 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

C. Proposal Request Form: Use Gensler “Bulletin,” selecting, Architect’s Request for Contractor’s Proposal”.

1.4 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on Gensler “Change Order” form included at end of Part 3.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01250
01250/9-98/ttt

Bulletin Number

Gensler

Project | **Date**

Project Location | **Architect's Project Number**

Owner/Client | **File** 6BL | **This is page** 1 of

To | **Attention**

Address

City | **State** | **Zip Code**

Delivered via: ☐ **Messenger** ☐ **Hand carried** ☐ **Facsimile** ☐ **Express** ☐ **Pick-up** ☐ **E-mail Address** ☐ **Mail** ☐ **UPS** ☐ **Website Address**

This Bulletin Conveys to Contractor (Check one of the following five choices.):

☐ **Architect's Authorization for Minor Changes**
Architect recommends modifications to the Work as described below.

☐ **Architect's Clarification / Supplemental Instructions** (Use this Bulletin form in place of *Architect's Supplemental Instructions* form.)
Contractor shall carry out the Work in accordance with the following supplemental instructions.

☐ **Architect's Confirmation of a Field Order** (Use this Bulletin form in place of a *Field Order* form.)
This confirms Architect's verbal instructions to (individual's name) _____ on (date) _____, as described below.

Note: The above three choices are each subject to the following terms: The change(s), clarification(s) and/or confirmation(s) described below is/are issued in accordance with the Contract Documents, without change in Contract Sum and/or Time.

☐ **Architect's Request for Contractor's Proposal** (Use this Bulletin form in place of an *Estimate Request* form.)
Please submit an itemized proposal for changes in the Contract Sum and/or Time for proposed modifications to the Contract Documents described herein.

Submit proposal **within** _____ **days** or notify the Architect in writing ofthe date on which you anticipate submitting your proposal. This is not a Change Order or a Construction Change Directive or a direction to proceed with the Work described in the proposed modifications.

☐ **Other:** As described below.

Attachments

Requested by

☐ Architect ☐ Owner ☐ Contractor ☐ Other (specify):

Issued by Gensler by | **Date Signed**

Issued by Owner by | **Date Signed**

☐ Required; Please return signed copy to Gensler ☐ Not Required

Accepted by Contractor by | **Date Signed**

☐ Required; Please return signed copy to Gensler ☐ Not Required

Distribution

Prepared by Gensler by | **Date Signed**

Instructions / Description / References / Dates

Begin text here . . .

Change Order Number

Gensler

Project	**Date**
Project Location	**Project Number**
Owner/Client	**File** 6CO **This is page** 1 of
Contractor	**Contractor's Request / Quotation Number / Date**
Change to Contract Sum: $	**Change to Contract Time:**
Original Contract Amount: $	**Revised Contract Amount:** $

☐ **See Change Order Summary for Revised Total Contract Amount and Time**

Reason for Change	**Requested by**

Recommended for Approval by Gensler: by	**By**	**Date Signed**
Approved for Owner/Client	**By**	**Date Signed**
Approved for Contractor	**By**	**Date Signed**
Approved for Tenant (if applicable)	**By**	**Date Signed**

The above Change Order to the contract shall be effective upon signature by all applicable parties, in accordance with the Conditions of the Contract. The Contract Amount refers to the Contract Sum or guaranteed Maximum Cost in the Contract.

Distribution

Description / References / Costs / Dates

Begin text here . . .

REQUEST FOR INFORMATION

DATE:_____ RFI No.:_____

TO: GENSLER
<**Insert Street Address Here**>
<**Insert City and zip code here**>

RE:_____ Project No.:_____
(Project Name) (Gensler Project Number)

FROM:_____ Project No.:_____
(Contractor) (Contractor Project Number)

_____ Subcontractor:_____
(Address)

_____ Sub Contractor RFI No.:_____

_____ Date Recv=d by Contractor_____

DESCRIPTION

Subject: _____

Drawing and Detail No./Date:_____

Schedule Title_____

Contract Change_____, Specification No./Date_____

Bulletin No. Date_____ Paragraph No._____

Other/Date_____, Enclosures:_____

Description of Problem or Requested Information and Proposed Solution (if any):

BY:_____ Response Requested By:_____
(RFI Manager)

SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project.

1.2 COORDINATION

A. Coordination: Coordinate construction operations to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.
2. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.

1.3 SUBMITTALS

A. Coordination Drawings: Prepare and submit Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.

1.4 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

1.5 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Record minutes in writing. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within 3 days of the meeting.
4. Notification: Inform participants 3 days prior to meetings not regularly scheduled.

B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect. Hold the conference at a convenient location. Conduct the meeting to review responsibilities and personnel assignments.

C. Preinstallation Conferences and Meetings: Conduct a preinstallation conferences and meetings at Project site before each construction activity that requires coordination with other construction.

D. Progress Meetings: Conduct progress meetings at weekly intervals.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01310
01310/9-98/ttt

SECTION 01330 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.

B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

C. Processing Time: Promptly submit Shop Drawings Product Data and Samples in accordance with the accepted schedule, as to cause no delay in the Work. Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal.

1. Initial Review: Allow 10 working days for initial submittal review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Architect will advise Contractor when a submittal being processed must be delayed for coordination. Delaying submittals to facilitate coordination between submittals shall not constitute a delay of the Work nor shall it be the basis for an extension of time.
2. Concurrent Review: Concurrent review is a submittal that requires review by more than one design discipline. Where concurrent review of submittals by Architect's consultants, Owner, or other parties is required, submittal review shall provide adequate time to reflect concurrent review.

3. Direct Transmittal to Consultant: Where the Contract Documents indicate that submittals may be transmitted directly to Architect's consultants, provide duplicate copy of transmittal to Architect. Submittal will be returned to Architect before being returned to Contractor.
4. If intermediate submittal is necessary, process it in same manner as initial submittal.
5. Number of days for processing each resubmittal shall be the same as the initial review submittal.
6. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit a coordinated and duly expedited processing.

D. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 5 inches by 6 inches on label or beside title block to record Architect's review markings.
3. Include the following information on label for processing and recording action taken:

    a. Project name.
    b. Date.
    c. Name and address of Architect.
    d. Name and address of Contractor.
    e. Name and address of subcontractor.
    f. Name and address of supplier.
    g. Name of manufacturer.
    h. Unique identifier, including revision number. Submittals shall be numbered consecutively and the numbering system shall be retained throughout all revisions.
    i. Number and title of appropriate Specification Section.
    j. Drawing number and detail references, as appropriate.
    k. Other necessary identification.

E. Deviations: Highlight, encircle, or otherwise identify all deviations from the Contract Documents on submittals.

F. Resubmission: Unless corrected copies are required for final submittal due to Architect’s observance of noncompliance with provisions of the Contract Documents, initial submittal may serve as final submittal.

1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.
2. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.

G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will discard submittals received from sources other than Contractor.

1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements of the Contract Documents,

including minor variations and limitations. Include the same label information as the related submittal.

2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.

H. Transmittal Form: Execute the attached form with each submittal.

I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

J. Use for Construction: Use only final submittals with mark indicating final action taken by Architect in connection with construction.

K. Substitution requests are not allowed in the form of submittals. Substitution requests must be made in accordance with Division 1 Section, “Product Requirements.”

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

1. Number of Copies: Submit three copies of each submittal, unless otherwise indicated. Architect will return two copies. Mark up and retain one returned copy as a Project Record Document.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Clearly mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Manufacturer's written recommendations.
b. Manufacturer's product specifications.
c. Manufacturer's installation instructions.
d. Standard color charts.
e. Manufacturer's catalog cuts.
f. Wiring diagrams showing factory-installed wiring.
g. Printed performance curves.
h. Operational range diagrams.
i. Standard product operating and maintenance manuals.
j. Compliance with recognized trade association standards.
k. Compliance with recognized testing agency standards.
l. Application of testing agency labels and seals.
m. Notation of coordination requirements.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Include the following information, as applicable:

   a. Dimensions.
   b. Identification of products.
   c. Fabrication and installation drawings.
   d. Roughing-in and setting diagrams.
   e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
   f. Shopwork manufacturing instructions.
   g. Templates and patterns.
   h. Schedules.
   i. Design calculations.
   j. Compliance with specified standards.
   k. Notation of coordination requirements.
   l. Notation of dimensions established by field measurement.

2. Number of Copies:

   a. Submit three blue- or black-line prints. Architect will retain two prints; remainder will be returned.

D. Samples: Prepare physical units of materials or products, including the following:

1. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
2. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material to be used for the Work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
3. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Architect's sample where so indicated. Attach label on unexposed side that includes the following:

   a. Generic description of Sample.
   b. Product name or name of manufacturer.
   c. Sample source.

4. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.

   a. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a Sample, submit at least three sets of samples that show the range of variations.

b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.

5. Number of Samples for Initial Selection: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
6. Number of Samples for Verification: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned.

   a. Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.

7. Systems Submittals: Identify submittals for systems such as fire alarms, and sprinkler systems on the transmittal and act upon the system singularly as a combined submittal. If resubmission is required, resubmit entire system submittal.
8. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

E. Application for Payment: Comply with requirements in Division 1 Section "Payment Procedures."

F. Schedule of Values: Comply with requirements in Division 1 Section "Payment Procedures."

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.

1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect will not return copies.
2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

B. Contractor's Construction Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation."

C. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.

D. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.

E. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

F. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 1 Section "Closeout Procedures."

G. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

H. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

I. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections.

J. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, coordinated, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each properly executed submittal, make marks to indicate corrections or modifications required, and return it. Architect will reject and return submittals not complying with requirements. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. No exception Taken. No further review of Submittal required.
2. Make Corrections as Noted. Incorporate corrections in Work; resubmittal is not required. If Contractor cannot comply with corrections as noted, revise to respond to exceptions and resubmit.
3. Revise and Resubmit. Revise as noted & resubmit for further review.
4. Resubmit Properly. Submittal not reviewed because it does not contain Contractor's signature indicating its review and approval, and/or is not in proper condition for review. Resubmit.
5. Not Reviewed. Submittal is not required by Contract Documents.

C. Informational Submittals: Architect may review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Submittals not required by the Contract Documents will not be reviewed and may be discarded or returned marked "Not Reviewed."

END OF SECTION 01330
01330/9-98/ttt

Data Waiver

Gensler

Entity Requesting Data ("Transferee")	**Transferee Contact Name**
Project	**Project Number**
Client	**Date**
	File 1C **This is page** 1 of 1

Transferee has asked "Gensler" to provide copies of certain Documents and/or CAD data files ("Data") prepared by Gensler for the Project. Gensler agrees to provide Transferee with the requested Data, under the terms of this CAD Agreement ("Agreement").

1. The transfer of the Data is not and shall not be deemed a sale. The Data are instruments of service. Gensler shall be deemed the Data's author and shall retain all proprietary rights, including any copyrights, embodied therein.

2. Transferee may transfer the Data to its Contractors, Subcontractors, Suppliers, and Consultants (collectively "Others"), provided Transferee requires the Others to be bound by this Agreement as if they were the Transferee in this Agreement. Transferee and Others may use the Data only for purposes related to the Project.

3. The Data are furnished "as is". Gensler makes no representations or warranties, express or implied, of the Data's merchantability or fitness for a particular purpose, with respect to the Data's quality, adequacy, completeness, or sufficiency, or as to any results to be achieved by the Data's use or the Data's conformance with as-built conditions.

4. Transferee acknowledges that anomalies and errors may occur when the Data is transferred electronically or used in an incompatible computer environment. Transferee solely accepts the risks associated with, and the responsibility for, any damages to hardware, software, computer systems, or networks related to the Data's transfer or use. Gensler shall have no responsibility to provide software or training to allow Transferee to use the Data.

5. Gensler shall have no duty to modify or update the Data. Gensler may retain an archival copy of the Data, which shall be conclusive proof and govern in any dispute over the Data's form or content.

6. Transferee agrees to indemnify, defend and hold Gensler, its officers, directors, shareholders, employees, agents, and consultants harmless from and against any and all claims, liabilities, suits, demands, losses, damages, costs, and expenses, including, but not limited to, reasonable attorneys' fees and all legal expenses and fees incurred through appeal, and all interest thereon, accruing to or resulting from any and all persons, firms or any other legal entities on account of any damages or losses to property or persons, including, but not limited to, injuries, death or economic losses, arising out of Transferee's or Others' use, reuse, transfer, or modification of the Data, except where a court or forum of competent jurisdiction determines that Gensler is solely liable for such damages or losses.

7. If Transferee fails to perform or observe any of the terms of this Agreement, Gensler may demand, and Transferee immediately shall return, the Data and any copies thereof.

8. This Agreement shall be governed by California law.

9. In any legal proceeding to enforce this Agreement, the prevailing party shall be entitled to recover its reasonable attorneys' fees and costs of defense.

10. Unless otherwise explicitly agreed to in writing by the parties, this Agreement shall govern any and all future data transfers to Transferee by Gensler.

Gensler Authorization by	**Date Signed**
Input Principal or Managing Principal's name here	
Transferee Authorization by	**Date Signed**

Advancement of Construction Technology

SUBMITTAL TRANSMITTAL

Project: _____ Date: _____

_____ A/E Project Number: _____

TRANSMITTAL A To (Contractor): _____ Date: _____ Submittal No. _____

From (Subcontractor): _____ By: _____ ☐ Resubmission

Qty.	Reference / Number	Title / Description / Manufacturer	Spec. Section Title and Paragraph / Drawing Detail Reference

☐ Submitted for review and approval
☐ Resubmitted for review and approval
☐ Complies with contract requirements
☐ Will be available to meet construction schedule
☐ A/E review time included in construction schedule
☐ Substitution involved - Substitution request attached
☐ If substitution involved, submission includes point-by-point comparative data or preliminary details
☐ Items included in submission will be ordered immediately upon receipt of approval

Other remarks on above submission: ☐ One copy retained by sender

TRANSMITTAL B To (A/E): _____ Attn: _____ Date Rec'd by Contractor: _____

From (Contractor): _____ By: _____ Date Trnsmt'd by Contractor: _____

☐ Approved
☐ Approved as noted
☐ Revise / Resubmit
☐ Rejected / Resubmit

Other remarks on above submission: ☐ One copy retained by sender

TRANSMITTAL C To (Contractor): _____ Attn: _____ Date Rec'd by A/E: _____

From (A/E): _____ ☐ Other By: _____ Date Trnsmt'd by A/E: _____

☐ Approved
☐ Approved as noted
☐ Not subject to review
☐ No action required
☐ Revise / Resubmit
☐ Rejected / Resubmit
☐ Approved as noted / Resubmit
☐ Provide file copy with corrections identified
☐ Sepia copies only returned
☐ Point-by-point comparative data required to complete approval process
☐ Submission Incomplete / Resubmit

Other remarks on above submission: ☐ One copy retained by sender

TRANSMITTAL D To (Subcontractor): _____ Attn: _____ Date Rec'd by Contractor: _____

From (Contractor): _____ By: _____ Date Trnsmt'd by Contractor: _____

Copies: ☐ Owner ☐ Consultants ☐ _____ ☐ _____ ☐ _____ ☐ One copy retained by sender

September 1996
CSI Form 12.1A

Advancement of Construction Technology

SUBCONTRACTORS AND MAJOR MATERIAL SUPPLIERS LIST

Project: _____

_____

To (A/E): _____

_____

From (Contractor): _____

Date: _____

A/E Project Number: _____

Contract For: _____

List Subcontractors and Major Material Suppliers proposed for use on this Project as required by the Construction Documents. Attach supplemental sheets if necessary.

Section Number	Section Title	Firm	Address	Phone Number (Fax Number)	Contact

☐ Attachments

Signed by: Date:

Copies: ☐ Owner ☐ Consultants ☐_____ ☐_____ ☐_____ ☐_____ ☐_____ ☐_____ ☐_____ ☐ File

July 1994
CSI Form 1.5A

SUBMITTAL REVIEW

A ☐ **NO EXCEPTIONS TAKEN.** No further review of Submittal required.

B ☐ **MAKE CORRECTIONS AS NOTED.** Incorporate corrections in work; resubmittal is not required. If Contractor cannot comply with corrections as noted, revise to respond to exceptions and resubmit.

C ☐ **REVISE & RESUBMIT.** Revise as noted & resubmit for further review.

D ☐ **RESUBMIT PROPERLY.** Submittal not reviewed because it does not contain Contractor's signature indicating its review and approval, and/or is not in proper condition for review. Resubmit.

E ☐ **NOT REVIEWED.** Submittal is not required by Contract Documents.

Gensler ("Architect") has reviewed this Submittal, but only for the limited purpose of checking for general conformance with the visual and aesthetic design concept as expressed in the Contract Documents. Architect's action on a specific item shall not indicate approval of an assembly of which the item is a component, nor of an item as delivered and installed if it does not conform to the Contract Documents.

Contractor, not Architect, is responsible for: checking for any deviations between this Submittal and differing information or conditions in the Contract Documents and field conditions; for determining or substantiating the accuracy and completeness of other details such as confirming dimensions and quantities; for substantiating instructions for installation or performance of equipment or systems designed by Contractor; for construction means, methods, techniques, schedules, sequences procedures and fabrication processes; for errors and omissions in Submittals; for coordination of the Work of the trades and for safety precautions and performing the work in a safe and satisfactory manner and in conformance with all requirements of the Contract Documents.

Notwithstanding any claim of authorship and/or ownership by Contractor or others in this Submittal, Contractor's preparation of this Submittal and/or Architect's action on this Submittal in no way divests Architect or others of any rights, including but not limited to, ownership and copyrights embodied in the Submittal.

No Submittal shall be used as a substitute for requests or approvals of changes or substitutions, or of other procedures required by the Contract Documents. Contractor shall notify Architect immediately of any intent to make any claim based on this Submittal or notations thereon.

If more than one submittal review stamp appears on the Submittal, the most stringent action and notations thereon shall apply. Signature on a submittal review stamp by the Architect or a consultant does not imply that it has reviewed work not within its professional discipline or scope of services.

By ____________________ Date ____________________

Project No. ____________________ Submittal No. ____________________

SRS 063099

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By ____________________ Date ____________________

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SRS 063099

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By ____________________ Date ____________________

Project No. ____________________ Submittal No. ____________________

SRS 063099

SECTION 01420 - REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

A. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

B. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted" have the same meaning as "directed."

C. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

D. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

E. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

F. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

G. "Provide": Furnish and install, complete and ready for the intended use.

H. "Installer": Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations. Installers shall be experienced in the operation they are engaged to perform.

I. "Experienced": Unless otherwise specified in the technical sections when used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

J. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings.

K. “As Required”: As required by regulatory bodies, by referenced standards, by existing conditions, by generally accepted construction practice or by the Contract Documents. In the event of ambiguity or conflicts, the most stringent requirements shall apply.

L. “By Others” refers to work that is not a part of the Contract.

M. "N.I.C.: "Not in Contract" means the work or the item indicated is not a part of the Contract and will be provided by the Owner.

1.2 STANDARDS, REGULATIONS AND CODES

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.

C. Conflicting Requirements: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum..

D. Abbreviations and Acronyms for Standards and Regulations: Where abbreviations and acronyms are used, they shall mean the recognized name of the standards and regulations in the following list.

ADAAG	Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities Available from Access Board www.access-board.gov	 (800) 872-2253 (202) 272-5434
CFR	Code of Federal Regulations Available from Government Printing Office www.access.gpo.gov/nara/cfr	 (888) 293-6498 (202) 512-1530
FS	Federal Specification Available from General Services Administration www.fss.gsa.gov/pub/fed-specs.cfm	 (202) 619-8925

E. Abbreviations and Acronyms for Industry Standards and Regulations: Where abbreviations and acronyms are used they shall mean the recognized name of the entities in the following list.

AA	Aluminum Association, Inc. (The) www.aluminum.org	(202) 862-5100
AABC	Associated Air Balance Council www.aabchq.com	(202) 737-0202
AAMA	American Architectural Manufacturers Association www.aamanet.org	(847) 303-5664

ADC	Air Diffusion Council www.flexibleduct.org	(312) 201-0101
AGA	American Gas Association www.aga.org	(202) 824-7000
AHA	American Hardboard Association www.ahardbd.org	(847) 934-8800
AIA	American Institute of Architects (The) www.e-architect.com	(202) 626-7300
AISC	American Institute of Steel Construction www.aisc.org	(800) 644-2400 (312) 670-2400
AISI	American Iron and Steel Institute www.steel.org	(202) 452-7100
AMCA	Air Movement and Control Association International, Inc. www.amca.org	(847) 394-0150
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
APA	APA - The Engineered Wood Association www.apawood.org	(253) 565-6600
ARI	Air-Conditioning & Refrigeration Institute www.ari.org	(703) 524-8800
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers www.ashrae.org	(800) 527-4723 (404) 636-8400
ASME	ASME International (The American Society of Mechanical Engineers International) www.asme.org	(800) 843-2763 (212) 591-7722
ASPE	American Society of Plumbing Engineers www.aspe.org:8080	(773) 693-2773
ASSE	American Society of Sanitary Engineering www.asse-plumbing.org	(440) 835-3040
ASTM	American Society for Testing and Materials www.astm.org	(610) 832-9585
AWCI	AWCI International (Association of the Wall and Ceiling Industries International)	(703) 534-8300

	www.awci.org	
AWI	Architectural Woodwork Institute www.awinet.org	(800) 449-8811 (703) 733-0600
AWPA	American Wood-Preservers' Association www.awpa.com	(817) 326-6300
AWS	American Welding Society www.aws.org	(800) 443-9353 (305) 443-9353
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122
CDA	Copper Development Association Inc. www.copper.org	(800) 232-3282 (212) 251-7200
CISCA	Ceilings & Interior Systems Construction Association www.cisca.org	(630) 584-1919
CPA	Composite Panel Association (Formerly: National Particleboard Association) www.pbmdf.com	(301) 670-0604
CRI	Carpet & Rug Institute (The) www.carpet-rug.com	(800) 882-8846 (706) 278-3176
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
EIA	Electronic Industries Alliance www.eia.org	(703) 907-7500
GA	Gypsum Association www.gypsum.org	(202) 289-5440
GANA	Glass Association of North America (Formerly: FGMA - Flat Glass Marketing Association) www.glasswebsite.com/gana	(785) 271-0208
HPVA	Hardwood Plywood & Veneer Association www.hpva.org	(703) 435-2900
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The) www.ieee.org	(212) 419-7900
IESNA	Illuminating Engineering Society of North America www.iesna.org	(212) 248-5000
MFMA	Maple Flooring Manufacturers Association www.maplefloor.org	(847) 480-9138

MIA	Marble Institute of America www.marble-institute.com	(614) 228-6194
NAAMM	National Association of Architectural Metal Manufacturers www.naamm.org	(312) 332-0405
NEBB	National Environmental Balancing Bureau www.nebb.org	(301) 977-3698
NECA	National Electrical Contractors Association www.necanet.org	(301) 657-3110
NeLMA	Northeastern Lumber Manufacturers' Association www.nelma.org	(207) 829-6901
NEMA	National Electrical Manufacturers Association www.nema.org	(703) 841-3200
NFPA	National Fire Protection Association www.nfpa.org	(800) 344-3555 (617) 770-3000
NOFMA	National Oak Flooring Manufacturers Association www.nofma.org	(901) 526-5016
NPA	National Particleboard Association (See CPA)	
NTMA	National Terrazzo and Mosaic Association, Inc. www.ntma.com	(800) 323-9736 (703) 779-1022
NWWDA	National Wood Window and Door Association (See WDMA)	
PDCA	Painting and Decorating Contractors of America www.pdca.com	(800) 332-7322 (703) 359-0826
SDI	Steel Door Institute www.steeldoor.org	(440) 899-0010
SGCC	Safety Glazing Certification Council www.sgcc.org	(315) 646-2234
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association www.smacna.org	(703) 803-2980
SPIB	Southern Pine Inspection Bureau (The) www.spib.org	(850) 434-2611
SSPC	SSPC: The Society for Protective Coatings	(800) 837-8303

	www.sspc.org	(412) 281-2331
TCA	Tile Council of America, Inc. www.tileusa.com	(864) 646-8453
TIA	Telecommunications Industry Association www.tiaonline.org	(703) 907-7700
UL	Underwriters Laboratories Inc. www.ul.com	(800) 704-4050 (847) 272-8800
WCLIB	West Coast Lumber Inspection Bureau www.wclib.org	(800) 283-1486 (503) 639-0651
WWPA	Western Wood Products Association www.wwpa.org	(503) 224-3930

F. Federal Government Agencies: Where abbreviations and acronyms are used, they shall mean the recognized name of the entities in the following list.

CPSC	Consumer Product Safety Commission www.cpsc.gov	(800) 638-2772 (301) 504-0990
DOC	Department of Commerce www.doc.gov	(202) 482-2000
OSHA	Occupational Safety & Health Administration www.osha.gov	(202) 693-1999

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01420
01420/11-00/ttt

SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for temporary facilities and controls.

1. Provide and maintain all temporary facilities and controls necessary for the performance of the Work. Locate and install all temporary facilities and controls where acceptable to the local authorities having jurisdiction and utility owner and remove same and terminate, in a manner suitable to the local authorities having jurisdiction and utility owner, at completion of Work or when otherwise directed. Unless otherwise specified, pay all costs associated with the use, provision, and maintenance of, temporary facilities and controls including power, water, and fuel (if any) consumed until Substantial Completion.

1.2 PROJECT CONDITIONS

A. Use of Permanent Utilities: When each permanent utility is operational, it may be used for construction purposes, if acceptable, in writing, by the Owner. The written request for permission for use of the system from the Owner shall include, as a minimum, the conditions and reasons for use and provisions for and effect on equipment warranties. In the event that the Owner accepts the Contractors use of the permanent utility for the balance of the Work, the Contractor shall be fully responsible for it, and shall pay all costs for operation, power, restoration and maintenance of same.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Engage appropriate local utility company to install temporary service or connect to existing service. Where utility company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with utility company recommendations.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

2. Provide adequate capacity at each stage of construction.

B. Toilet, Water, and Drinking Water Facilities: The Contractor shall make arrangements with the Landlord or Property Manager for use of the existing toilet, water, and drinking water facilities.

C. Ventilation and Humidity Control: Provide adequate ventilation in enclosed areas throughout construction period required to: facilitate progress of Work; to protect Work and products against dampness and heat; to prevent moisture condensation on surfaces; to provide suitable ambient temperatures for installation and curing of finish materials; to provide adequate ventilating; to meet health regulations for safe working environment; and, to prevent hazardous accumulations of dusts, fumes, mists, vapors or gases in areas occupied during construction. Provide local exhaust ventilating to prevent harmful dispersal of hazardous substances into atmosphere of occupied areas. Dispose of exhaust materials in manner that will not result in harmful exposure to persons or property. Provide ventilating operations at all times personnel occupy an area, when subject to hazardous accumulations of harmful elements. Continue operation of ventilating system for as long as required after cessation of Work to assure removal of harmful elements.

1. In the event that the Owner accepts the Contractor's use of the permanent ventilation and air conditioning systems for the balance of the Work, provide and maintain temporary filters to adequately filter air being distributed through the ductwork and air handling units to the supply outlets; disposable filter shall be placed in front of all exhaust registers to keep construction dirt out of exhaust duct work.

D. Electric Power and Lighting Service:

1. Arrange with local electric utility for temporary electric service to the site. Provide all installation and equipment for temporary lighting and power. The electrical service shall be of adequate capacity for all construction tools and equipment without overloading the temporary facilities.

a. Provide power distribution throughout the site as required to facilitate construction operations. Terminations shall be provided for each voltage supply complete with circuit breakers, disconnect switches and other electrical devices as required to protect the power supply system.

b. A temporary lighting system shall be furnished, installed and maintained by the Contractor as required to satisfy the minimum requirements of security and safety. Provide general illumination for the entire project. Provide increased levels of illumination where the work is being installed.

2. All temporary equipment and wiring for power and lighting shall be in accordance with the applicable provisions of the governing codes and regulations, the NEC, NEMA, and OSHA standards. All temporary power and lighting shall be maintained to give safe working conditions, continuous service, and so as not to pose a threat to the Owner's property. Modify and extend temporary power and lighting systems as the Work progress requires.

E. Telephone Service: Provide temporary telephone service throughout construction period. Long distance calls shall be paid for by the party making the call. A pay phone is not acceptable.

3.3 TEMPORARY SUPPORT FACILITIES AND PROTECTION

A. Project Identification and Temporary Signs: No Project identification, signs or advertisements will be permitted on the project site.

B. Construction Aids: Provide all items, such as lifting devices, all scaffolding, staging, platforms, runways, ladders; and all temporary flooring, as required by the various trades for the proper execution of the Work. Provide such construction aids with proper guys, bracing, guards, railings and other safety devices as required by the governing authorities and OSHA.

C. Elevator and Loading Dock Usage: The Contractor shall make all arrangements with the Landlord or Property Manager for the use of elevators as required for transporting material and workmen to the work areas and for the disposal of rubbish and waste materials.

D. Security: Provide and maintain provisions for closing and locking the site to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

E. Temporary Partitions: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.

F. Temporary Fire Protection: Throughout the site, during construction, provide for fire protection and fire prevention in accordance with all applicable Federal, state and local codes and regulations.

3.4 TERMINATION AND REMOVAL

A. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Remove and dispose of temporary filters and thoroughly clean the interior of the air handling units and duct work prior to acceptance of the Work. Provide all new filters in heating, ventilation and air conditioning systems.
2. Replace all lamps of the permanent lighting system, to comply with the Contract Documents, at no cost to the Owner.
3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 1 Section "Closeout Procedures."

END OF SECTION 01500
01500/9-98/ttt

SECTION 01524 — CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for waste reduction and for the recycling of non-hazardous, recyclable, construction and demolition debris.

1. Reduce waste by minimizing factors that contribute to waste.
2. Use reasonable and legal means to divert construction and demolition debris from landfills and incinerators by facilitating their recycling or reuse through a Contractor developed, construction waste management program.

1.2 DEFINITIONS

A. Waste Reduction: Construction practices that achieve the most efficient use of resources and materials; uses water efficiently; avoids practices such as over-packaging, improper storage, ordering errors, poor planning, breakage, mishandling and contamination.

B. Construction and Demolition Debris: Solid wastes arising from demolition or removal, excess or unusable construction materials, packing materials for construction products, and other materials generated on site during the construction process but not incorporated into the Work.

C. Recyclable Materials: Construction and demolition debris that can be recovered and processed into new products or materials. Recyclable materials include, but are not limited to, the following:

1. Metals: Ferrous (iron, steel, stainless steel, galvanized steel) and non-ferrous (copper, brass, bronze, aluminum) types and containers made from metals such as pails, buckets and beverage cans.
2. Concrete.
3. Gypsum wallboard.
4. Paper products such as generated from field office activities and clean corrugated packaging cardboard.
5. Wood products, including untreated dimensional lumber, plywood, oriented strand board, hardboard, particleboard and crates and pallets made from wood products.
6. Carpet and padding.
7. Plastics and containers made from plastics such as pails, buckets, and beverage bottles.
8. Copper wiring.
9. Glass: Glass beverage containers, window and mirror glass.

D. Non-Recyclable Materials: Construction and demolition debris not capable of being reused or reprocessed, exclusive of the recyclable materials listed above.

E. Hazardous Materials: Construction and demolition debris that are regulated for disposal by local, city, county, state, or Federal authorities.

1.3 SUBMITTALS

A. Construction Waste Management Program: Submit the waste management program. The program shall include the following:

1. Identification of Contractor's staff responsible for enforcing construction waste management.
2. Actions that will be taken to reduce solid waste generation.
3. Description of the specific methods to be used in recycling/reuse of the various construction and demolition debris generated, including the areas and equipment, to be used for processing, sorting, and temporary storage of debris.
4. Characterization, including estimated types and quantities of the construction and demolition debris to be generated. Include percentages of recyclable and non-recyclable debris.
5. List of specific construction and demolition debris materials that will be salvaged for resale, salvaged and reused, or recycled.
6. Name(s) of landfill and incinerator to be used and the estimated costs for use, for construction and demolition debris that is unable to be recycled or reused.
7. Identification of local and regional reuse programs, including non-profit organizations such as schools, local housing agencies, and organizations that accept used and excess construction materials such as materials exchange networks and Habitat for Humanity.
8. Identification of local recycling facilities that will accept construction and demolition debris.
9. Identification of construction and demolition debris that cannot be recycled/reused with an explanation or justification.

1.4 QUALITY ASSURANCE

A. Waste Management Program: Prepare a program that minimizes waste and diverts construction and demolition debris from landfills and incinerators by facilitating their reuse or recycling. Name the waste material processors who will accept the construction and demolition debris, the condition of the construction and demolition debris required by the waste material processors, the method proposed to provide the construction and demolition debris in suitable condition and in a quantity acceptable to the disposal sites and waste material processors who will receive them, and the impact on the project schedule. The Contractor shall be responsible for implementation of any special programs involving rebates or similar incentives related to the recycling of waste. Revenues or other savings obtained from sale, reuse, and recycling operations shall accrue to the Contractor.

B. Disposal Sites and Waste Material Processors: Use only facilities with valid legal permits for disposal, recycling and waste processing issued by the jurisdictions in which they are located.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 WASTE MANAGEMENT PROGRAM IMPLEMENTATION

A. Distribution: The Contractor shall distribute copies of the Waste Management Program to the Job Site Foreman, each Subcontractor, the Owner and the Architect.

B. General: For the duration of the project implement and maintain waste management program. During the prosecution of the Work encourage the practice of efficient waste reduction when sizing, cutting, and installing products and materials.

C. Transportation: Arrange for the regular collection, transport from the site, and delivery of the construction wastes and debris to the designated recyclers, and waste material processors and disposal sites.

D. Separation Facilities: The Contractor shall provide on-site instruction of appropriate handling, and recycling, salvage, reuse and return methods to be used by all parties at the appropriate stages of the Project. Provide and designate an on-site area for the separation of construction and demolition debris for reuse and recycling. Provide containers and bins in the designated area to facilitate separation, storage and handling which are clearly and appropriately marked. Cut all items to lengths and sizes to fit within the containers or bins provided. Where there is sufficient quantity of a specific recyclable debris item (for example; salvaged metal doors and frames or duct work), make arrangements for items to be bundled, banded or tied, and stack in a designated location for a special pick-up. Maintain the separation facilities in an orderly condition. Separate construction and demolition debris at the project site by the following method:

1. Co-Mingled Method: All construction and demolition debris is placed into containers or bins and then transported to a recycling facility where recyclable and salvageable materials are removed, sorted, and processed and the remaining waste is transported to a landfill or incinerator.

END OF SECTION 01524
01150 custom/08-01/ttt

SECTION 01600 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following administrative and procedural requirements for the selection of products for use in the Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and product substitutions.

1.2 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents as proposed by Contractor.

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

D. Manufacturer's Warranty: A written warranty authored by the manufacturer of its furnished product whose provisions are conveyed by manufacturer directly to Owner.

E. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

1.3 SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use form provided at end of Section.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

    a. Statement indicating why specified material or product cannot be provided.
    b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, product material content, product manufacture, weight, size, durability, service life, maintenance, visual effect, and specific features and requirements indicated.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
i. Cost information, including a proposal of change, if any, in the Contract Sum.
j. Time value to be added to, or subtracted from, the Contract time of Completion.
k. Benefit(s) to the Owner.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation. Architect will notify Contractor of acceptance or rejection of proposed substitution. Substitution requests, if any, shall be submitted so as to allow a reasonable time for their consideration and shall not be justification for delay of the Work.

1.4 QUALITY ASSURANCE

A. General: All bids shall be based on the products required in the Contract Documents.

B. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
5. Store products to allow for inspection and measurement of quantity or counting of units.

6. Store materials in a manner that will not endanger Project structure.
7. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
8. Protect stored products from damage.

B. Storage: Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.6 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: Forms are included with the Specifications. Prepare a written document using appropriate form properly executed.
3. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 1 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SUBSTITUTIONS

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged, and unless otherwise indicated, that are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: Unless custom products or nonstandard options are specified, provide products of both quality and type that have been used successfully in similar situations on equal quality projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

B. Product Selection Procedures: Procedures for product selection include the following:

1. Product: Where Specification paragraphs or subparagraphs titled "Product" name a single product and manufacturer, provide the product named.
2. Manufacturer/Source: Where Specification paragraphs or subparagraphs titled "Manufacturer" or "Source" name single manufacturers or sources, provide a product by the manufacturer or from the source named that complies with requirements.
3. Products: Where Specification paragraphs or subparagraphs titled "Products" introduce a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specification paragraphs or subparagraphs titled "Manufacturers" introduce a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Basis of Design Products: Where paragraphs or subparagraphs titled “Basis of Design Product(s)” are included. Provide either the specified product or a comparable product. Drawings and specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.
6. Visual Matching Specification: Where Specifications require matching an established Sample, select a product (and manufacturer) that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches satisfactorily.

    a. If no product available within specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents on "substitutions" for selection of a matching product.

7. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product (and manufacturer) that complies with other specified requirements.

C. Substitutions: Substitutions will be considered only under one of the following conditions:

1. That the specified product is not available due to lockout, strike, bankruptcy, product discontinuance, Acts of God, and that the proposed product will match or exceed the quality of the specified product while either providing the Owner with a cost savings or expediting the Work.

2. When a warranty of performance is specified and, in the judgment of the Contractor, the specified product will not provide the desired performance.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01600
01600/9-98/ttt

Substitution Request

Gensler

Project	**Date**
Project Location	**Project Number**
General Contractor	**File** 6S
Prepared by	**This is page** 1 of

We certify that the following product is equal or superior to the specified product in appearance, durability, performance, and in every other respect, and we hereby submit it for your consideration as a substitute for the specified item for the above-mentioned project:

1. **Specified Item** **Section**
2. **Proposed Substitution**

3. **Reason for Substitution**

4. **Costs** (Provide a complete breakdown of costs, including the cost amount to be DEDUCTED from the Contract Sum if the proposed substitution is accepted. Include documentation for both materials and labor.)

5. **Schedule** (Describe substitution's affect on construction schedule)

6. **Supporting Data**
   - **Cutsheets: Attach complete technical data, including laboratory tests, if applicable.**
   - **Installation: Include complete information on changes to Drawings and/or Specifications describing the steps that the proposed substitution will require for its proper installation.**
   - **Samples: Submit with request all necessary samples and substantiating data clearly marked to prove equal quality and performance to that which is specified.**
7. **List ways in which the substitution affects dimensions shown on Drawings.**

8. **List affects of proposed substitution on other trades**

9. **List ways in which proposed substitution will be affected by applicable code requirements and agency approval**

10. **List differences between proposed substitution and specified item**

11. **Manufacturer's warranties of the proposed and specified items are:** ☐ **Same** ☐ **Different**

Explain

12. **List information on availability of maintenance service and source of replacement materials**

13. **Certification of, and Assumption of Liability for, Equivalent Performance**

The undersigned certifies that the function, appearance and quality of the proposed substitution is equivalent or superior to the specified item and is in full compliance with the Contract Documents and applicable regulatory requirements.

Supplier		**Signature**	
Telephone No.		**Date**	

Signature must be by person authorized to legally bind his/her firm to the above terms. Failure to provide legally binding signature will result in retraction of approval.

General Contractor		**Signature**	
Telephone No.		**Date**	

SECTION 01700 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.

3.2 PREPARATION

A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

3.3 CONSTRUCTION LAYOUT

A. General: The Work to be performed under the Contract Documents shall be laid out solely by the Contractor. Provide and pay for all construction layout work required for the Project. Under no circumstances will the Architect assume any responsibilities for laying out the Work.

1. Verify all dimensions shown on the drawings. Do not scale Drawings to obtain required dimensions. Notify the Architect in writing of any discrepancies found before proceeding or continuing with the Work.

B. Construction Layout: During the progress of the Work establish additional bench marks, reference lines and reference points and levels at each floor and as otherwise necessary for the guidance and information of each trade and for the field verification of specified construction tolerances. Calculate and measure required dimensions within indicated or recognized tolerances.

3.4 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

D. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.

3.5 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

1. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

3.6 STARTING AND ADJUSTING

A. Start and test equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.7 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.8 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and or broken glass or reflective surfaces.

END OF SECTION 01700
01700/9-98/ttt

SECTION 01731 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes procedural requirements for cutting and patching**,** and selective demolition.

1.2 DEFINITIONS

A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

C. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

D. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.

E. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

F. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 SUBMITTALS

A. Activity Schedule: Indicate the following:

1. Detailed sequence of alteration and removal work, with starting and ending dates for each activity. Ensure Owner's, Landlord’s or Property Manager’s, and other tenants' on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of elevator and stairs.
5. Locations of proposed dust- and noise-control temporary partitions and means of egress, including for other tenants affected by selective demolition operations.
6. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

7. Means of protection for items to remain and items in paths of ingress and egress, for the removal of waste from building.

1.4 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

C. Visual Requirements: Do not alter, cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not alter, cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the aesthetic qualities of the site. Remove and replace construction that has been altered, cut and patched in a visually unsatisfactory manner.

1.5 PROJECT CONDITIONS

A. Owner will occupy portions of the site immediately adjacent to area where cutting, demolition and patching work is to be prosecuted. Conduct cutting, demolition, and patching work so Owner's operations will not be disrupted.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Patching Materials: Use patching materials identical to existing materials and which visually match existing adjacent surfaces.

PART 3 - EXECUTION

3.1 PREPARATION

A. General: Comply with the Landlord’s or Property Manager’s Lease requirements, tenant work letter, and the building rules and requirements for using and protecting elevators, stairs, walkways, loading docks, building entries, and other building facilities during cutting and patching operations.

B. Temporary Partitions: Erect dustproof partitions to limit spread of dust and dirt during cutting and demolition work. Mop hard surfaced floors, and vacuum carpeted areas, to eliminate tracked dust, cutting, and demolition debris. Dust off ceiling and wall surfaces indicated to remain in areas where cutting and demolition operations have occurred.

C. Cover and protect fixtures, furnishings, and equipment that are not to be removed in areas where cutting and demolition operations are to be prosecuted.

D. Do not close or obstruct walkways, passageways, or stairways. Do not store or place materials in passageways, stairs, or other means of egress. Conduct cutting and demolition operations with minimum traffic interference.

E. Provide adequate fire protection in accordance with local fire department requirements.

F. Existing Utilities and Services: Before starting work relating to existing utilities and services (electrical, plumbing, HVAC, gas, fire protection, telephone, etc.) that will temporarily discontinue or disrupt service to the existing building, or Owner occupied spaces, notify the Architect, Owner, and Landlord or Property Manager.

1. Provide at least 72 hours' notice to Architect, Owner, and Landlord or Property Manager, and obtain the Owner's and Landlord's or Property Manager's approval in writing before proceeding with this aspect of the Work.

G. Drilling and Cutting: Before starting work relating to drilling and the cutting of structural members, notify the Architect, Owner, and Landlord or Property Manager. Prior to drilling and cutting of existing structural concrete members locate reinforcing using non-destructive methods, notify the Architect, Owner, and the Landlord or Property Manager where drilling and cutting operations will sever or cut into a portion of the existing reinforcing.

1. Provide at least 72 hours' notice to Architect, Owner, and Landlord or Property Manager, and obtain the Owner's and Landlord's or Property Manager's approval in writing before proceeding with this aspect of the Work.

3.2 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching and demolition work. Proceed with cutting and patching and demolition work at the earliest feasible time, and complete without delay.

1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

2. Remove all debris as the cutting and demolition work progresses in a manner that will prevent spillage or damage to adjacent surfaces, areas in the building, and to the Owner occupied portions of the existing tenant space. Do not allow debris to accumulate on-site. Transport debris off Owner's property and legally dispose of it.

3. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, removed materials shall become Contractor's property and shall be removed from Project site.

B. Cutting and Demolition Work: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, using methods least likely to damage elements retained or adjoining construction.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces.
2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Cut off projecting anchorage and attachment items as required to properly provide for patching and repair of the respective finishes.
4. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

5. Mechanical and Electrical Services and Utilities: Cut off ducts, pipe or conduit in walls or partitions to be removed. Cap, or plug and seal remaining portion of ducts, pipe or conduit to provide a watertight closure after cutting.
6. Removed and Salvaged Items: Remove and transport items to storage area designated by Owner unless otherwise indicated on the Drawings.
7. Removed and Reinstalled Items: Clean and repair items to functional condition adequate for intended reuse. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
8. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.

1. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
2. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance

    a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

3. Ceilings: Patch, and repair, existing ceilings as necessary to provide an even-plane surface of uniform appearance.

D. Workmanship: If a wall, or ceiling that has been patched is to be painted, the final 2 coats of paint shall be applied to the entire wall, corner to corner, or the entire ceiling wall to wall.

END OF SECTION 01731
01731/9-98/ttt

SECTION 01770 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout.

1.2 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Submit specific warranties, workmanship bonds, final certifications, and similar documents.
3. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
4. Prepare and submit Project Record Documents, operation and maintenance manuals, and similar final record information.
5. Submit test/adjust/balance records.
6. Complete final cleaning requirements, including touchup painting.
7. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.3 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment.
2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order, proceeding from lowest floor to highest floor.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

a. Project name.
b. Date.
c. Name of Architect.
d. Name of Contractor.
e. Page number.

1.5 PROJECT RECORD DOCUMENTS

A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

B. Record Drawings: Maintain and submit one set of blue- or black-line white prints of Contract Drawings and Shop Drawings.

1. Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up record prints.

a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later, and the locations of those items that need to be located for servicing.
b. Accurately record information in a readily understandable drawing technique.
c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
d. Mark record prints completely and accurately.
e. Mark important additional information that was either shown schematically or omitted from original Drawings.
f. Note Change Order numbers, alternate numbers, and similar identification where applicable.

C. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Clearly mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Note related Change Orders, Record Drawings, and Product Data, where applicable.

D. Record Product Data: Submit one copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Drawings, where applicable.

E. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections such as tests and inspections, and inspections by authorities having jurisdiction. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.6 OPERATION AND MAINTENANCE MANUALS

A. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:

1. Operation Data:

a. Emergency instructions and procedures.
b. System, subsystem, and equipment descriptions, including operating standards.
c. Operating procedures, including startup, shutdown, seasonal, and weekend operations.
d. Description of controls and sequence of operations.
e. Piping diagrams.
f. Noise and vibration adjustments.
g. Effective energy utilization.

2. Maintenance Data:

a. Manufacturer's information, including list of spare parts.
b. Name, address, and telephone number of Installer or supplier.
c. Maintenance procedures.
d. Maintenance and service schedules for preventive and routine maintenance.
e. Maintenance record forms.
f. Sources of spare parts and maintenance materials.
g. Copies of maintenance service agreements.

h. Copies of warranties and bonds.
i. Cleaning.
j. Control sequence.
k. Fuels, lubricants, tool, and other related items.
l. Identification systems.

B. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title "OPERATION AND MAINTENANCE MANUAL," Project name, and subject matter of contents.

1.7 WARRANTIES

A. Submittal Time: Submit written warranties for designated portions of the Work.

B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period.

PART 2 - PRODUCTS

2.1 MATERIALS (Not Used)

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

a. Remove tools, construction equipment, machinery, and surplus material from Project site.
b. Clean exposed hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition.
c. Remove debris and surface dust from limited access spaces, including plenums, shafts, and similar spaces.
d. Sweep concrete floors broom clean in unoccupied spaces.
e. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.

f. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.

g. Remove labels that are not meant to be permanent.

h. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

1) Do not paint over or remove "UL" and similar labels, including mechanical and electrical nameplates.

i. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.

j. Replace parts subject to unusual operating conditions.

k. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

l. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

m. Clean ducts, blowers, and coils if units were operated without filters during construction.

n. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in lighting fixtures to comply with requirements for new fixtures.

o. Leave Project clean and ready for occupancy.

C. Comply with safety standards for cleaning. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01770
01170/9-98/ttt

Certificate of Substantial Completion

Gensler

Project	**Project Number**
Project Location	**Date Issued**
Owner / Client	**File** 6SC
Contractor	**This is page** 1 of
Contract Date	
Date of Substantial Completion	

Date of Substantial Completion is applicable to ☐ **Entire Project** ☐ **Designated Portion of Project, as described below**

Punch List ☐ **Attached** ☐ **Transmitted Separately** ☐ **None**

The Work performed under the Contract for Construction has been reviewed and found, to Architect's best knowledge, information and belief, to be substantially complete as of the Date of Substantial Completion entered above. The Date of Substantial Completion is the date when the Work, or designated portion thereof, is sufficiently complete in accordance with the Contract Documents (including any approved change Orders) and all required final inspections and permits have been obtained so Owner can occupy or utilize the Work for its intended use, subject only to completion of minor items (Punch List).

The Work, or designated portion thereof shall include:

A list of items to be completed or corrected and the date(s) when such items are to be completed (Punch List) may be attached hereto or transmitted separately. This Certificate of Substantial Completion, or omission of any item from the Punch List shall not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. The Architect shall not be responsible for any omission from, or other discrepancy on, the Punch List. Contractor agrees to complete or correct the items listed on the Punch List within days of the above date of Substantial Completion.

Warranties required under the Contract Documents shall commence on the Date of Substantial Completion, except for Punch List items and other incomplete work, warranties for which shall commence on the date such work is satisfactorily completed, unless otherwise agreed in writing by Owner and Contractor.

The Owner and Contractor shall fulfill and transfer responsibilities with regard to insurance, utilities, maintenance, damage, security, surety, and the like, in accordance with the Contract Documents or other written agreement between them.

The Architect has conducted no tests for, and made no determination of the presence or lack of asbestos or other hazardous or toxic substances or pollutants.

The Basic Services of the Architect shall end 30 days after the Date of Substantial Completion, unless otherwise stated in the Owner/Architect Agreement or agreed in writing.

Begin text here . . .

Architect Gensler	**By**	**Date Signed**
Owner/Client	**By**	**Date Signed**
Contractor	**By**	**Date Signed**

SECTION 05500 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes metal fabrications.

1.2 PERFORMANCE REQUIREMENTS

A. Structural Performance:

1. Countertop and Vanity Framing: Provide countertop and vanity framing capable of withstanding the following structural loads without exceeding the allowable design working stress of the materials involved, including anchors and connections, or of exhibiting excessive deflections in any of the components making up the countertops and vanities:

   a. All deadloads.
   b. 500 pound live load placed on the countertop and vanity.
   c. Deflection at Midspan: L/1000 times span or 1/8-inch- (3-mm) whichever is less.

1.3 SUBMITTALS

A. Shop Drawings: Submit shop drawings including plans, elevations, sections, details of installation, and attachments to other Work.

1. For installed products indicated to comply with performance requirements, include structural analysis data, for information only, signed and sealed by the qualified professional engineer responsible for their preparation.

2. Include plans and elevations at not less than 1" to 1'-0" scale, and include details of sections and connections at not less than 3" to 1'-0" scale.

1.4 QUALITY ASSURANCE

A. Fabricator/Installer Qualifications: A firm experienced in producing metal fabrications similar to those indicated for this Project for a minimum of 5 years, with a record of successful in-service performance, with sufficient production capacity to produce required units without causing delay in the work.

B. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel."

C. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

1.5 PROJECT CONDITIONS

A. Field Measurements: Where metal fabrications are indicated to fit walls and other construction, verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

PART 2 - PRODUCTS

2.1 METALS

A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.

B. Ferrous Metals:

1. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
2. Steel Tubing: Cold-formed steel tubing complying with ASTM A 500, or hot formed steel tubing complying with ASTM A 501.
3. Steel Pipe: ASTM A 53, Type S – Seamless, Grade A suitable for close coiling or cold bending, standard weight (Schedule 40) minimum, unless otherwise indicated or required to satisfy performance requirements, black finish.
4. Slotted Channel Framing: Cold-formed metal channels 1-5/8 by 1-5/8 inches (41 by 41 mm) with flange edges returned toward web and with 9/16-inch- (14.3-mm-) wide slotted holes in webs at 2 inches (51 mm) o.c.
5. Iron Castings: ASTM A 47, Grade 32510 (ASTM A 47M, Grade 22010) malleable iron or ASTM A 48, Class 30 (ASTM A 48M, Class 200) gray iron.
6. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

2.2 PAINT

A. Shop Primer for Ferrous Metal: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with performance requirements in FS TT-P-664 and compatible with finish paint systems indicated.

2.3 MISCELLANEOUS MATERIALS

A. Fasteners: Zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5, of type, grade, and class required by application indicated.

B. Nonshrink, Nonmetallic Grout: ASTM C 1107, factory-packaged, nonstaining, noncorrosive, nongaseous grout.

2.4 FABRICATION

A. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling

limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

1. Welded connections may be used where bolted connections are shown.

B. Shear and punch metals cleanly and accurately. Remove burrs.

C. Weld corners and seams continuously along entire line of contact. Use materials and methods that minimize distortion and develop strength of base metals. Obtain fusion without undercut or overlap. Remove welding flux immediately. Finish exposed welds smooth and blended.

D. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous. Make up threaded connections tight so that threads are entirely concealed.

E. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices and fasteners to secure metal fabrications rigidly in place and to support indicated loads.

F. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

G. Miscellaneous Framing and Supports: Provide steel framing and supports indicated and as necessary to complete the Work and which are not a part of the structural framework, including but not limited to framing and supports for vertically folding operable partitions, overhead lobby door frames, accordion folding partitions, operable panel partitions, overhead rolling doors and grilles, sliding doors, countertop and vanities, ceiling hung toilet compartments, projection screens, ceiling hung televisions and cameras, tube framing for partial height walls, CMU partition head supports, mechanical and electrical equipment.

1. Fabricate units from structural-steel shapes, plates, and bars of welded construction, unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction retained by framing and supports. Cut, drill, and tap units to receive hardware, hangers, and similar items.

2. Countertop and Vanity Framing: Custom fabricate countertop and vanity framing, using steel shapes and plates, and cold finished mild steel bars at exposed conditions, for support framing and plywood, to the thicknesses, sizes and shapes shown, and as required to produce work of adequate strength and durability, without objectionable deflections. Use proven details of fabrication, as required, to achieve proper assembly and alignment of the various components of the work.

H. Surface Applied Corner Guards: Provide corner guards fabricated from angles of sizes shown, or if not shown, of minimum 4-1/2 x 4-1/2 x ¼ inch- (114.3 x 114.3 x 6 mm) thick equal leg angles. Drill and countersink legs of angles, for fastening to substrates indicated, with holes spaced 24-inch- (610 mm) on center. Provide corner guard lengths of 42-inch- (1068-mm) if not otherwise indicated.

2.5 FINISHES

A. Finish metal fabrications after assembly. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Shop prime ferrous-metal items.

1. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces by removing oil, grease, and similar contaminants in accordance with SSPC -SP 1 “Solvent Cleaning,” followed with SSPC-SP 3, "Power Tool Cleaning."

2. Apply a minimum of one coat of shop primer to uncoated surfaces of metal fabrications, except those to be field welded, and those to be embedded in sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1," for shop painting.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Provide anchorage devices and fasteners for securing metal fabrications to in-place construction. Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, with edges and surfaces level, plumb, and true. Drill holes for bolts to the exact diameter of the bolt. Provide screws threaded full length to the screw head.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations.

C. Field Welding: Comply with the following requirements:

1. Use materials and methods that minimize distortion and develop strength of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

D. Touch up surfaces and finishes after erection. Clean field welds, bolted connections, and abraded areas and touch up paint with the same material as used for shop painting.

END OF SECTION 05500
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SECTION 05700 - ORNAMENTAL METAL

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes custom ornamental metal - cast seal.

1.2 SUBMITTALS

A. Product Data: For each product indicated.

B. Shop Drawings: Show details of fabrication and installation. Indicate materials, finishes, fasteners, anchorages, and accessory items.

C. Patterns, Models, or Plaster Castings: For each custom casting required.

D. Samples: For each type of exposed finish required.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Ornamental Castings and Forgings:

a. Allen Architectural Metals.
b. Alloy Casting Co., Inc.
c. Architectural Iron Company, Inc.
d. Blum, Julius & Co., Inc.
e. Braun, J. G. Company; a division of the Wagner Companies.
f. Classic Iron Supply/Craft.
g. Colonial Castings, Inc.
h. Cullar/La Cuesta.
i. Dempsey, Inc.
j. Historical Arts & Casting, Inc.
k. Indital USA.
l. Lawler Foundry Corporation.
m. Morrow, Frank Company.
n. Olin Wrought Iron.
o. OMC Industries, Inc.

p. Robinson Iron.
q. Tennessee Fabricating Co.
r. Texas Metal Industries, Inc.
s. TT Triebenbacher - Bavarian Iron Works Co.
t. Universal Manufacturing Co., Inc.
u. Matthews

2.2 METALS

A. Aluminum: Provide alloy and temper recommended by aluminum producer and finisher with strength and durability properties not less than that of alloy and temper designated below.

1. Extruded Bars and Shapes: ASTM B 221 (ASTM B 221M), Alloy 6063-T5/T52.
2. Castings: ASTM B 26/B 26M, alloy A356.0-T6.

2.3 MISCELLANEOUS MATERIALS

A. Fasteners: Same basic metal as fastened metal; concealed, unless otherwise indicated, with Phillips flat-head screws for exposed fasteners.

B. Anchors: Fabricated from corrosion-resistant materials with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined per ASTM E 488.

C. Wire-Rope Fittings: Fabricated from stainless steel and with strength equal to minimum breaking strength of wire rope with which they are used.

D. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

E. Brazing Rods: For copper alloys, provide type and alloy as recommended by producer of metal to be brazed and as required for color match, strength, and compatibility in fabricated items.

F. Shop Primers: Provide primers that comply with Division 9 painting Sections.

G. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.

H. Zinc-Rich Primer: Comply with SSPC-Paint 20 or SSPC-Paint 29 and compatible with topcoat.

I. Shop Primer for Galvanized Steel: Zinc-dust, zinc-oxide primer compatible with finish paint systems indicated, and complying with SSPC-Paint 5.

2.4 FABRICATION

A. Form ornamental metal true to line and level with true curves and accurate angles and surfaces. Finish exposed surfaces to smooth, sharp, well-defined lines and arris.

B. Mill joints to a tight, hairline fit. Cope or miter corner joints. Fabricate connections that will be exposed to weather in a manner to exclude water.

C. Comply with AWS for recommended practices in shop welding and brazing. Clean exposed welded and brazed joints of flux, and dress exposed and contact surfaces.

2.5 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Protect mechanical finishes by applying a strippable, temporary protective covering before shipping.

B. Aluminum Finishes: Designations are as established by the Aluminum Association.

1. Clear Anodic Finish: Class II, AA-M12C22A31 and I, AA-M12C22A41 complying with AAMA 611.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Provide anchorage devices and fasteners where necessary for securing to in-place construction.

B. Set products accurately in location, alignment, and elevation. Fit exposed connections accurately together to form tight, hairline joints or, where indicated, with uniform reveals and spaces for sealants and joint fillers.

C. Do not cut or abrade finishes that cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing, or provide new units as required.

D. Install concealed gaskets, joint fillers, insulation, and flashings as work progresses.

E. Restore protective coverings that have been damaged during shipment or installation. Remove protective coverings only when there is no possibility of damage from other work.

F. Corrosion Protection: Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

END OF SECTION 05700

SECTION 06105 - MISCELLANEOUS CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes miscellaneous carpentry.

1.2 SUBMITTALS

A. Product Data: Submit product data for each type of process and factory-fabricated product indicated.

1. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that materials comply with requirements.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber, plywood, and other panels; for lumber and plywood pressure treated with waterborne chemicals place spacers between each bundle to provide air circulation.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: Comply with DOC PS 20 “American Softwood Lumber Standard” and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
3. Provide dressed lumber, S4S, unless otherwise indicated.
4. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal (38-mm actual) thickness or less, unless otherwise indicated.

B. Wood Panels:

1. Plywood: Comply with DOC PS 1 “Construction and Industrial Plywood” for plywood panels.
2. Thickness: As needed to comply with requirements specified but not less than thickness indicated.

2.2 FIRE-RETARDANT-TREATED MATERIALS

A. General: Provide chemical fire retardant process tested and labeled by UL with flame spread and smoke developed ratings of 25 or less. Comply with performance requirements in AWPA C20 (lumber) and AWPA C27 (plywood) for Interior Use Type A High Temperature

(HT) as a minimum for pressure treatment. Size wood before treatment so that minimum cutting will be required after treatment. Kiln dry lumber to a maximum 19% moisture content, kiln dry plywood to a maximum 15% moisture content, after treatment. Treat indicated items and the following:

1. Wood members required to be treated by Building Code having jurisdiction at the site and wood members specified as fire retardant treated.

B. Identify fire-retardant-treated wood with appropriate classification marking of UL.

2.3 MISCELLANEOUS LUMBER

A. Provide miscellaneous lumber for support or attachment of other construction, including blocking, nailers, and similar members.

B. For concealed boards, provide lumber with 19 percent maximum moisture content and the following species and grades:

1. Mixed southern pine, No. 2 grade; SPIB.

2.4 PANEL PRODUCTS

A. Concealed Plywood for Countertop Underlayment: APA Exterior sheathing, in thickness as indicated but not less than 3/4 inch.

B. Telephone, Data, Security, Artwork Blocking, Mirror and Electrical Equipment Backing Panels: APA, Exposure 1, C-D Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 15/32 inch thick.

2.5 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

B. Power-Driven Fasteners: CABO NER-272.

C. Nails, Wire, Brads, and Staples: FS FF-N-105.

D. Wood Screws: ASME B18.6.1.

E. Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.

F. Lag Bolts: ASME B18.2.1. (ASME B18.2.3.8M).

G. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.

1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Securely attach carpentry work as indicated and according to applicable codes and recognized standards.

C. Use fasteners of appropriate type and length. Predrill members when necessary to avoid splitting wood.

3.2 WOOD BLOCKING AND NAILER INSTALLATION

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

3.3 PANEL PRODUCT INSTALLATION

A. General: Comply with applicable recommendations contained in APA Form No. E30K, "APA Design/Construction Guide: Residential & Commercial," and local utility requirements, if any, for plywood backing panels utilized as indicated.

B. Fastening Methods: Fasten panels as indicated below:

1. Countertop Underlayment: Bolt to miscellaneous steel framing.
2. Plywood Backing Panels: Secure to wall using proper fastening devices for substrates encountered spaced 12" o.c. maximum at perimeter 1/2" from corners and three rows of 3 fasteners each in the backerboard field. Countersink fasteners flush with plywood surface. Butt adjacent panels without lapping.

END OF SECTION 06105
06105/11-99/ttt

SECTION 06402 - INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Interior standing and running trim.
2. Interior frames and jambs.
3. Flush wood paneling
4. Wood cabinets.
5. Plastic-laminate cabinets.
6. Plastic-laminate countertops.
7. Solid-surfacing-material countertops.
8. Shop finishing of woodwork.

B. Interior architectural woodwork includes wood furring, blocking, shims, and hanging strips unless concealed within other construction before woodwork installation.

C. Rough carriages for stairs are a part of interior architectural woodwork. Platform framing, headers, partition framing, and other rough framing associated with stairwork are specified in Division 6 Section "Rough Carpentry."

1.2 SUBMITTALS

A. Product Data: For surfacing material, cabinet hardware and accessories, and finishing materials and processes.

B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.

C. Samples:

1. Lumber and panel products for transparent finish, for each species and cut, finished on one side and one edge.
2. Lumber and panel products with shop-applied opaque finish, for each finish system and color, with exposed surface finished.
3. Plastic-laminates, for each type, color, pattern, and surface finish.
4. Thermoset decorative panels, for each type, color, pattern, and surface finish.
5. Solid-surfacing materials.

D. Woodwork Quality Standard Company.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of woodwork.

B. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards."
   1. Provide AWI Quality Certification Program labels and certificate for woodwork, and include installation.

C. Forest Certification: Provide interior architectural woodwork produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC 1.2, "Principles and Criteria."

1.4 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

PART 2 - PRODUCTS

2.1 WOODWORK FABRICATORS

A. Fabricators: Subject to compliance with requirements, provide interior architectural woodwork by one of the following:

2.2 MATERIALS

A. Wood Species and Cut for Transparent Finish: Tiami, ¼ cut.

B. Wood Species for Opaque Finish: Any closed-grain hardwood.

C. Wood Products:

   1. Hardboard: AHA A135.4.
   2. Medium-Density Fiberboard: ANSI A208.2, Grade MD
   3. Particleboard: ANSI A208.1, Grade .
   4. Softwood Plywood: DOC PS 1.
   5. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1.

D. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1.

E. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or, if not indicated, as required by woodwork quality standard.

F. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with ISSFA-2.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. ABA Industries.
    b. Avonite, Inc.
    c. E. I. du Pont de Nemours and Company.
    d. Formica Corporation.
    e. LG Chemical, Ltd.
    f. Meganite Inc.; a division of the Pyrochem Group.
    g. Nevamar Company, LLC; Decorative Products Div.
    h. Samsung; Cheil Industries Inc.
    i. Swan Corporation (The).
    j. Transolid, Inc.
    k. Wilsonart International; Div. of Premark International, Inc.

G. Float Glass for Cabinet Doors: ASTM C 1036, Type I, Class 1 (clear), Quality-Q3, ¼" thick.

H. Tempered Float Glass for Cabinet Doors: ASTM C 1048, Kind FT, Condition A, Type I, Class 1 (clear), Quality-Q3, with exposed edges seamed before tempering, 6 mm thick, unless otherwise indicated.

2.3 FIRE-RETARDANT-TREATED MATERIALS

A. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Comply with performance requirements of AWPA C20 (lumber) and AWPA C27 (plywood). Use Exterior Type or Interior Type A. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Kiln-dry material after treatment.

B. Fire-Retardant Particleboard: Panels made from softwood particles and fire-retardant chemicals mixed together at time of panel manufacture with flame-spread index of 25 or less and smoke-developed index of 25 or less per ASTM E 84.

C. Fire-Retardant Fiberboard: ANSI A208.2 medium-density fiberboard panels made from softwood fibers, synthetic resins, and fire-retardant chemicals mixed together at time of panel manufacture with flame-spread index of 25 or less and smoke-developed index of 200 or less per ASTM E 84.

2.4 CABINET HARDWARE AND ACCESSORIES

A. General: Provide cabinet hardware and accessory materials associated with architectural woodwork, except for items specified in Division 8 Section Door Hardware (Scheduled by Naming Products).

B. Butt Hinges: 2-3/4-inch (70-mm), 5-knuckle steel hinges made from 0.095-inch- (2.4-mm-) thick metal, and as follows:

1. Semiconcealed Hinges for Flush Doors: BHMA A156.9, B01361.
2. Semiconcealed Hinges for Overlay Doors: BHMA A156.9, B01521.

C. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, degrees of opening.

D. Back-Mounted Pulls: BHMA A156.9, B02011.

E. Catches: Magnetic catches, BHMA A156.9, B03141.

F. Drawer Slides: BHMA A156.9, B05091.

1. Standard Duty (Grade 1, Grade 2, and Grade 3): Side mounted and extending under bottom edge of drawer; full-extension type; with polymer rollers.
2. Heavy Duty (Grade 1HD-100 and Grade 1HD-200): Side mounted; full-extension type; zinc-plated steel ball-bearing slides.
3. Box Drawer Slides: Grade 1; for drawers not more than 6 inches (150 mm) high and 24 inches (600 mm) wide.

G. Door Locks: BHMA A156.11, E07121.

H. Drawer Locks: BHMA A156.11, E07041.

I. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.

1. Dark, Oxidized, Satin Bronze, Oil Rubbed: BHMA 613 for bronze base; BHMA 640 for steel base; match Architect's sample.
2. Bright Brass, Clear Coated: BHMA 605 for brass base; BHMA 632 for steel base.
3. Bright Chromium Plated: BHMA 625 for brass or bronze base; BHMA 651 for steel base.
4. Satin Stainless Steel: BHMA 630.

2.5 MISCELLANEOUS MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, fire-retardant-treated, kiln-dried to less than 15 percent moisture content.

B. Adhesives, General: Do not use adhesives that contain urea formaldehyde.

2.6 FABRICATION

A. General: Complete fabrication to maximum extent possible before shipment to Project site. Where necessary for fitting at site, provide allowance for scribing, trimming, and fitting.

1. Interior Woodwork Grade: Premium.
2. Shop cut openings to maximum extent possible. Sand edges of cutouts to remove splinters and burrs. Seal edges of openings in countertops with a coat of varnish.
3. Install glass to comply with applicable requirements in Division 8 Section "Glazing" and in GANA's "Glazing Manual." For glass in wood frames, secure glass with removable stops.

B. Interior Standing and Running Trim:

1. For transparent-finished trim items wider than available lumber, use veneered construction. Do not glue for width.
2. Backout or groove backs of flat trim members and kerf backs of other wide, flat members, except for members with ends exposed in finished work.
3. Assemble casings in plant except where limitations of access to place of installation require field assembly.

C. Flush Wood Paneling:

1. Lumber Trim and Edges: At fabricator's option, trim and edges indicated as solid wood (except moldings) may be either lumber or veneered construction compatible with grain and color of veneered panels.
2. Matching of Adjacent Veneer Leaves: Book.
3. Veneer Matching within Panel Face: Center-balance match.
4. Panel-Matching Method: No matching between panels is required. Select and arrange panels for similarity of grain pattern and color between adjacent panels.
5. Panel-Matching Method: In each separate area, use sequence-matched, uniform-size sets.
6. Fire-Retardant-Treated Paneling: Provide panels consisting of wood veneer and fire-retardant particleboard or fire-retardant medium-density fiberboard. Panels shall have flame-spread index of 75 or less and smoke-developed index of 450 or less per ASTM E 84.

D. Wood Cabinets for Transparent Finish:

1. AWI Type of Cabinet Construction: As indicated.
2. Reveal Dimension: As indicated.
3. Grain Direction: Vertically for drawer fronts, doors, and fixed panels
4. Matching of Veneer Leaves: Book match.
5. Veneer Matching within Panel Face: Center-balance match.
6. Semiexposed Surfaces Other Than Drawer Bodies: Same species and cut indicated for exposed surfaces.
7. Drawer Sides and Backs: Solid-hardwood lumber, stained to match species indicated for exposed surfaces.
8. Drawer Bottoms: Hardwood plywood.
9. Provide dust panels of 1/4-inch (6.4-mm) plywood or tempered hardboard above compartments and drawers, unless located directly under tops.

E. Wood Cabinets for Opaque Finish:

1. AWI Type of Cabinet Construction: As inidcated
2. Reveal Dimension: As indicated.
3. Species for Exposed Lumber Surfaces: Any closed-grain hardwood.
4. Panel Product for Exposed Surfaces: Medium-density fiberboard.
5. Semiexposed Surfaces Other Than Drawer Bodies: Match materials indicated for exposed surfaces.
6. Drawer Sides and Backs: Solid-hardwood lumber.
7. Drawer Bottoms: Hardwood plywood.
8. Provide dust panels of 1/4-inch (6.4-mm) plywood or tempered hardboard above compartments and drawers, unless located directly under tops.

F. Plastic-Laminate Cabinets:

1. AWI Type of Cabinet Construction: As indicated.
2. Reveal Dimension: As indicated.
3. Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate as follows:

   a. Horizontal Surfaces Other Than Tops: Grade HGS.
   b. Postformed Surfaces: Grade HGP.
   c. Vertical Surfaces: Grade HGS.
   d. Edges: Grade HGS.
4. Drawer Sides and Backs: Thermoset decorative panels.
5. Drawer Bottoms: Hardwood plywood.
6. Colors, Patterns, and Finishes: As indicated by manufacturer's designations.
7. Colors, Patterns, and Finishes: As selected by Architect from laminate manufacturer's full range of matte finish.
8. Provide dust panels of 1/4-inch (6.4-mm) plywood or tempered hardboard above compartments and drawers, unless located directly under tops.

G. Plastic-Laminate Countertops:

1. High-Pressure Decorative Laminate Grade: HGS.].
2. Colors, Patterns, and Finishes: As indicated by manufacturer's designations.
3. Colors, Patterns, and Finishes: As selected by Architect from laminate manufacturer's full range of matte finish.
4. Edge Treatment: Same as laminate cladding on horizontal surfaces.

H. Solid-Surfacing-Material Countertops:

1. Solid-Surfacing-Material Thickness: 3/4 inch (19 mm).
2. Colors, Patterns, and Finishes: Match sample.

2.7 SHOP FINISHING

A. Finish architectural woodwork at fabrication shop. Defer only final touchup, cleaning, and polishing until after installation.

B. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of woodwork. Apply two coats to back of paneling.

C. Transparent Finish:

1. Grade: Premium
2. AWI Finish System: Conversion varnish.
3. Staining: Match approved sample for color.
4. Wash Coat for Stained Finish: Apply a wash-coat sealer to woodwork made from closed-grain wood before staining and finishing.
5. Open-Grain Woods: Tint filler to match stained wood.
6. Sheen: Semigloss, 46-60 gloss units measured on 60-degree gloss meter per ASTM D 523.

D. Opaque Finish:

1. Grade: Premium.
2. AWI Finish System: Conversion varnish.
3. Color: Match sample.
4. Sheen: Satin 31-45; Semigloss, 46-60 gloss units measured on 60-degree gloss meter per ASTM D 523.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas. Examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

B. Grade: Install woodwork to comply with requirements for the same grade specified in Part 2 for fabrication of type of woodwork involved.

C. Install woodwork level, plumb, true, and straight to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm). Shim as required with concealed shims.

D. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

E. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.

F. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Fill gaps, if any, between top of base and wall with plastic wood filler, sand smooth, and finish same as wood base if finished.

G. Paneling: Anchor paneling to supporting substrate with concealed panel-hanger clips. Do not use face fastening, unless otherwise indicated.

H. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation.

1. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches (400 mm) o.c. with No. 10 wafer-head screws sized for 1-inch (25-mm) penetration into wood framing, blocking, or hanging strips.

I. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop. Calk space between backsplash and wall with sealant specified in Division 7 Section "Joint Sealants."

END OF SECTION 06402

SECTION 08411 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Interior aluminum-framed storefronts.

    a. Glazing is retained mechanically with gaskets on four sides .

2. Interior manual-swing aluminum doors.
3. Interior aluminum door frames.

1.2 PERFORMANCE REQUIREMENTS

A. General: Provide aluminum-framed systems, including anchorage, capable of withstanding, without failure, the effects of the following:
1. Thermal movements.
2. Movements of supporting structure indicated on Drawings including, but not limited to, story drift and deflection from uniformly distributed and concentrated live loads.
3. Dimensional tolerances of building frame and other adjacent construction.
4. Failure includes the following:

    a. Deflection exceeding specified limits.
    b. Thermal stresses transferred to building structure.
    c. Framing members transferring stresses, including those caused by thermal and structural movements, to glazing.
    d. Glazing-to-glazing contact.
    e. Noise or vibration created by wind and thermal and structural movements.
    f. Loosening or weakening of fasteners, attachments, and other components.
    g. Sealant failure.
    h. Failure of operating units to function properly.

B. Structural-Sealant Joints: Designed to produce tensile or shear stress in structural-sealant joints of less than 20 psi (138 kPa).

C. Deflection of Framing Members Normal to Wall Plane: Limited to 1/175 of clear span for spans up to 13 feet 6 inches (4.1 m) or an amount that restricts edge deflection of individual glazing lites to 3/4 inch (19 mm), whichever is less.

D. Structural-Test Performance: Systems tested according to ASTM E 330 as follows:

1. When tested at positive and negative wind-load design pressures, systems do not evidence deflection exceeding specified limits.

2. When tested at 150 percent of positive and negative wind-load design pressures, systems, including anchorage, do not evidence material failures, structural distress, and permanent deformation of main framing members exceeding 0.2 percent of span.
3. Test Durations: As required by design wind velocity but not less than 10 seconds.

E. Temperature Change (Range): Systems accommodate 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

F. Air Infiltration: Maximum air leakage through fixed glazing and framing areas of systems of[0.06 cfm/sq. ft. (0.03 L/s per sq. m) of fixed wall area when tested according to ASTM E 283 at a minimum static-air-pressure difference of 1.57 lbf/sq. ft. (75 Pa)] [6.24 lbf/sq. ft. (300 Pa).

G. Condensation Resistance: Fixed glazing and framing areas of systems have condensation-resistance factor (CRF) of not less than 53 when tested according to AAMA 1503.

H. Average Thermal Conductance: Fixed glazing and framing areas of systems have average U-factor of not more than 0.69 Btu/sq. ft. x h x deg F (3.92 W/sq. m x K) when tested according to AAMA 1503.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1. Include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
2. For entrances, include hardware schedule and indicate operating hardware types, functions, quantities, and locations.

C. Samples: For each exposed finish.

D. Preconstruction Sealant Test Reports: For structural-sealant-glazed systems.

E. Product test reports.

F. Field quality-control test and inspection reports.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Acceptable to manufacturer and capable of preparation of data for aluminum-framed systems including Shop Drawings based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

B. Testing Agency Qualifications: An independent agency qualified according to ASTM E 699 for testing indicated.

C. Preconstruction Sealant Testing: For structural-sealant-glazed systems, perform sealant manufacturer's standard tests for compatibility and adhesion of sealants with each material that will come in contact with sealants and each condition required by aluminum-framed systems.

1. Determine corrective measures required to prepare each material to ensure compatibility with and adhesion of sealants, including, but not limited to, specially formulated primers.

1.5 WARRANTY

A. Special Assembly Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of aluminum-framed systems that do not comply with requirements or that deteriorate as defined in this Section within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including, but not limited to, excessive deflection.
b. Noise or vibration caused by thermal movements.
c. Deterioration of metals**,** metal finishes, and other materials beyond normal weathering.
d. Adhesive or cohesive sealant failures.
e. Failure of operating components to function properly.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: The design for aluminum-framed systems is based on Kawneer. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:

1. Arch Aluminum & Glass Co., Inc.
2. CMI Architectural Products, Inc.
3. Commercial Architectural Products, Inc.
4. EFCO Corporation.
5. Pittco Architectural Metals, Inc.
6. Tubelite Inc.
7. United States Aluminum.
8. Vistawall Architectural Products.
9. YKK AP America Inc.

2.2 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

1. Sheet and Plate: ASTM B 209 (ASTM B 209M).
2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221 (ASTM B 221M).
3. Extruded Structural Pipe and Tubes: ASTM B 429.
4. Structural Profiles: ASTM B 308/B 308M.

2.3 FRAMING SYSTEMS

A. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.

1. Construction: Nonthermal.

B. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

C. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.

1. Where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration, use self-locking devices.
2. Reinforce members as required to receive fastener threads.
3. Use exposed fasteners with countersunk Phillips screw heads**,** finished to match framing system.

D. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A 123/A 123M or ASTM A 153/A 153M requirements.

E. Framing System Gaskets and Sealants: Manufacturer's standard recommended by manufacturer for joint type.

2.4 GLAZING SYSTEMS

A. Glazing: As specified in Division 8 Section "Glazing."

B. Glazing Gaskets: Manufacturer's standard compression types, replaceable, molded or extruded, that maintain uniform pressure and watertight seal.

C. Spacers and Setting Blocks: Manufacturer's standard elastomeric types.

2.5 DOORS

A. Doors: Manufacturer's standard glazed doors, for manual swing operation.

1. Door Construction: 1-3/4-inch (44.5-mm) overall thickness, with minimum 0.125-inch-(3.2-mm-) thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deep penetration and fillet welded or that incorporate concealed tie rods.

2. Door Design: Narrow stile; 2-1/8-inch (54-mm) nominal width.

a. Accessible Doors: Smooth surfaced for width of door in area within 10 inches (255 mm) above floor or ground plane.

3. Glazing Stops and Gaskets: Beveled, snap-on, extruded-aluminum stops and preformed gaskets.

a. Provide nonremovable glazing stops on outside of door.

B. Door Hardware: As specified in Division 8 Section "Door Hardware."

2.6 DOOR HARDWARE

A. Scheduled Door Hardware: Provide door hardware according to the Door Hardware Schedule at the end of Part 3.

B. Cylinders: As specified in Division 8 Section "Door Hardware."

C. Cylinder Keying: Coordinate with Owner.

D. Strikes: Provide strike with black-plastic dust box for each latch or lock bolt; fabricated for aluminum framing.

E. Silencers: BHMA A156.16, Grade 1.

2.7 FABRICATION

A. Form aluminum shapes before finishing.

B. Door Frames: Reinforce as required to support loads imposed by door operation and for installing hardware.
1. At interior doors, provide silencers at stops to prevent metal-to-metal contact. Install three silencers on strike jamb of single-door frames and two silencers on head of frames for pairs of doors.

C. Hardware Installation: Factory install hardware to the greatest extent possible. Cut, drill, and tap for factory-installed hardware before applying finishes.

D. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.8 ALUMINUM FINISHES

A. Clear Anodic Finish: Class I, clear anodic coating complying with AAMA 611.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General:

1. Fit joints to produce hairline joints free of burrs and distortion.
2. Rigidly secure non-movement joints.

3. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration.
4. Seal joints watertight, unless otherwise indicated.

B. Metal Protection:

1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape or installing nonconductive spacers as recommended by manufacturer for this purpose.
2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

C. Set continuous sill members and flashing in full sealant bed as specified in Division 7 Section "Joint Sealants" and to produce weather-tight installation.

D. Install components plumb and true in alignment with established lines and grades, without warp or rack.

E. Install glazing as specified in Division 8 Section "Glazing."

F. Entrances: Install to produce smooth operation and tight fit at contact points.
1. Field-Installed Hardware: Install surface-mounted hardware according to hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

G. Erection Tolerances: Install aluminum-framed systems to comply with the following maximum tolerances:

1. Location and Plane: Limit variation from true location and plane to 1/8 inch in 12 feet over total length.
2. Alignment:

a. Where surfaces abut in line, limit offset from true alignment to 1/16 inch (1.5 mm).
b. Where surfaces meet at corners, limit offset from true alignment to 1/32 inch (0.8 mm).

3. Diagonal Measurements: Limit difference between diagonal measurement to 1/8 inch (3 mm.

END OF SECTION 08411

SECTION 08711 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes door hardware.

1.2 SUBMITTALS

A. Product Data: Submit product data including installation details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Samples: Submit samples of exposed door hardware for each type indicated below, in specified finish. Tag with full description for coordination with the Door Hardware Schedule.

1. Door Hardware: As follows:

a. Locks and latches.
b. Operating trim.

2. Samples will be returned to Contractor. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated into the Work, within limitations of keying requirements.

C. Door Hardware Schedule: Submit door hardware schedule prepared by or under the supervision of door hardware supplier. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware. The Architect's review of schedule shall neither be construed as a complete check nor shall it relieve the Contractor of responsibility for errors, deviations, or omissions from the specified requirements to provide complete door hardware for the project.

1. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening.

a. Organize door hardware sets in same order as in the Door Hardware Schedule at the end of Part 3.

2. Content: Include the following information:

a. Type, style, function, size, label, hand, and finish of each door hardware item.
b. Manufacturer of each item.
c. Fastenings and other pertinent information.
d. Location of each door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
e. Explanation of abbreviations, symbols, and codes contained in schedule.
f. Mounting locations for door hardware. Supply templates to door and frame manufacturer(s) to enable proper and accurate sizing and locations of cutouts for

hardware. Detail any conditions requiring custom extended lip strikes, or any other special or custom conditions.

g. Door and frame sizes and materials.

D. Keying Schedule: Submit keying schedule prepared by or under the supervision of supplier, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Supplier Qualifications: Door hardware supplier, who has completed a minimum of three (3) projects over the last 5 years which were similar in material, design and extent to that indicated for the project and which have resulted in construction with a record of successful in service performance, and who is or employs a qualified Architectural Hardware Consultant, available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.

1. Scheduling Responsibility: Preparation of door hardware and keying schedules.

C. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.

D. Regulatory Requirements: Comply with the following:

1. Provide hardware items complying with the applicable provisions for accessibility and usability by the disabled and handicapped in compliance with Americans with Disabilities Act (ADA).
2. NFPA 101: Comply with applicable provisions for means of egress doors.

E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings."

1.4 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

1.5 COORDINATION

A. Coordinate layout and installation of recessed pivots and closers with floor construction.

B. Templates: Furnish templates and door hardware schedules, coordinated for the application of door hardware items with door and frame details, to door opening fabricators and trades performing door opening work to permit the preparation of doors and frames to receive the

specified door hardware. Where the door hardware item scheduled is not adaptable to the finished size of door opening members requiring door hardware, submit an item having a similar operation and quality to the Architect for review. Each door hardware item shall be fabricated to templates.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in this Section, door hardware sets are keyed to each scheduled door in the door and frame schedule, and the Door Hardware Schedule at the end of Part 3.

1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and named manufacturer's products.
2. The hardware supplier shall review each hardware set and compare it with the door types, details, and sizes as shown and verify each hardware item for function, hand, backset, and method of fastening through shop drawing submittals.

2.2 HINGES AND PIVOTS

A. Butt Hinge Products and Manufacturers:
1. Standard Weight, Plain bearing, 5 Knuckle, Steel: Complying with BHA A156.1; A8133, one of the following:
   a. 5000; Bomer Ind., Inc. (B1)
   b. 1279; Hager Companies (HAG).
   c. T2714; McKinney Products Company (MCK).
   d. F179; Stanley Commercial Hardware (STH).

B. General Hinge and Pivot Characteristics: Where door jamb or trim projects to such an extent that the width of leaf specified will not allow the door to clear such frame or trim, furnish hinges and pivots with leaves of sufficient width to clear. Hinges and pivots shall be template hinges conforming to BHMA A156.1 and in accordance with door and frame material requirements.

C. Butt Hinge and Offset Pivot Hinge Quantity: Provide the following, unless otherwise indicated:
1. Three Hinges: For doors with heights of greater than 60 inches (1524 mm) to and including 90 inches (2286 mm).

D. Butt Hinge Sizes: 4-1/2 inches (114 mm) h. x 4 inches (102 mm) for doors up to and including 36 inches (914 mm) in width.

E. Hinge Characteristics: Full mortise type with square corners. All butt hinges are to have non-rising pins. All butt hinges shall be furnished with button tips.

F. Fasteners: Package all hinges and pivots with machine and wood screws as required by door and frame construction.

2.3 LOCKS AND LATCHES

A. Mortised Deadlocks: Heavy duty, commercial, deadlock complying with BHMA A156.5 Type E8211, Grade 1. Where thumb turn, or key, cylinders are scheduled, furnish types as specified for mortise locks fitted with proper cams. Thumb turn inside, key cylinder – outside.

1. MS1861; Adams-Rite Manufacturing Co. (ARM).

2.4 DOOR BOLTS

A. Manual Flush Bolts: Provide flush bolts, with 1" wide fronts, in paired sets (top and bottom), with 1/2" diameter flattened bolt tip and standard 12" rod. Flush bolts shall fit ANSI A115.4 door and frame preparation. Bolts to comply with BHMA A156.16, Type L14081, L14251 or L24081. Furnish rods of proper length to afford easy reach from the floor. Furnish manufacturers standard top strikes for top bolts.

1. Manual Flushbolts for Metal Doors: One of the following:

a. No. 780F; Door Controls International (DCI).
b. FB458; Ives: H. B. Ives (IVS).
c. 3917; Triangle Brass Manufacturing Company, Inc. (TBM).
d. 555; Rockwood Manufacturing Company (RM).

2.5 CYLINDERS AND KEYING

A. Cores for Bored Cylindrical Locksets: Provide key-in lever 6 pin cores for all bored cylindrical locksets, keyed into base building system, as manufactured by the bored lockset manufacturer.

B. Keying System: Final keying to determine lock cylinders, keyed alike sets, level of keying, master key groups, grandmaster keying system shall be as directed by the Owner. Supplier and Contractor shall meet with the Owner and obtain final instructions in writing. Provide 2 nickel silver keys for each lock, and 6 keys for each grandmaster and masterkey system. Provide 2 blank keys for each lock for the Owner’s convenience in making additional keys.

1. Temporary Cylinders: Provide temporary cylinders in locks during construction and as may be necessary for security or as may be requested by the Owner. All temporary cylinders shall be individually keyed as required and subject to a single master key.

2.6 STRIKES

A. Strikes for Locks and Latches: All strikes for locks and latches shall be provided by the lock and latch manufacturer unless otherwise specified or scheduled, refer to Article ‘Locks and Latches’.

B. Dustproof Floor Strikes: Complying with BHMA A156.16, Type L04251 or L14021, one of the following:

1. No. 80; Door Controls International.
2. DP2; H.B. Ives.

3. 3910; Triangle Brass Manufacturing Company, Inc. (TBM).
4. 570 x 571; Rockwood Manufacturing Company (RM).

2.7 OPERATING TRIM (PUSHES AND PULLS)

1. Type 1: As scheduled

2.8 ACCESSORIES FOR PAIRS OF DOORS

A. Lock Protectors: Fabricated from heavy gauge metal and in finish as scheduled. Fabricate lock protectors with no exposed fasteners on face of lock protector. Furnish protectors sized to cover the latch bolt area of the door and lock and narrow enough to clear rose and escutcheon lock trims, offset formed to clear strike projection. Machine lock protectors where required to accommodate rose and escutcheon trims, and cylinders.

1. LG Series Lock Guards; H. B. Ives (IVS).

2.9 CLOSERS

A. Overhead Concealed Closers, Butt and Offset Hung: Closers shall meet BHMA A156.4, Grade 1. Properly detail closers to meet application and installation requirements as indicated. Comply with manufacturers recommendations for size of door closer depending on size of door, stack pressure conditions, and anticipated frequency of use. Provide manufacturers standard cover plate finished to match exposed portions of butts or pivots provided.

1. 2010/2030; LCN Closers (LCN).
2. RTS 88 Series, Offset Slide Arm; Dorma.
3. 625; Sargent (SGT).

2.10 STOPS AND HOLDERS

A. Concealed Overhead Door Holders: Heavy duty, concealed mounting, full mortised, bronze bodied, slide track design, with heavy shock absorber spring providing 5 to 7 degree compression before deadstop, non-metal slide and shock blocks, 110 degree maximum opening, complying with BHMA A156.8 Type C11511 for hold open and Type C11541 for stop function. Provide stop, or hold open, functions as scheduled.

1. 1000 Series; Architectural Builders Hardware Mfg., Inc. (ABH).
2. 100 Series; Glynn-Johnson (GJ).
3. Checkmate Heavy Duty 1 Series; Rixson-Firemark, Inc. (RIX).

2.11 FABRICATION

A. Manufacturer's Nameplate: Provide each door hardware item without exposed manufacturers labels, names, or designs.

B. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to commercially recognized industry standards for application intended. Provide Phillips oval-head screws with finished heads to match surface of door hardware item being attached. Machine screws and expansion shields shall be used for attaching hardware to concrete and masonry. Use throughbolts for renovation work only where existing door blocking and reinforcements are unknown.

1. Concealed Fasteners: All new doors and door frames have been specified with adequate blocking and reinforcement provisions to eliminate exposed throughbolting of hardware items. Doors installed with exposed throughbolts will be rejected and replaced by the Contractor at no cost to the Owner. Where through bolts are used on existing doors provide sleeves for each through bolt.

2.12 FINISHES

A. Standard: Comply with BHMA A156.18.

B. Appearance of Finished Work: Finishes of the same designation, that come from 2 or more sources, shall match when the items are viewed at arms length and approximately 2' apart. Unless otherwise scheduled, match each hardware item in a single hardware set with the scheduled latch or lock set finish. Painting of BHMA 600 (USP) surfaces is required and is specified under Division 9 Section 'Painting':

C. Designations: The abbreviations used to schedule hardware finishes are generally BHMA (Federal Standards where indicated in parenthesis) designations. Comply with base material and finish requirements indicated by the following:
1. BHMA 628 (US28): Satin aluminum, clear anodized.

PART 3 - EXECUTION

3.1 PREPARATION

A. Install hardware in accordance DHI A115 (for steel doors and frames, DHI A115-W series for wood doors, and hardware manufacturers installation instructions for doors and frames fabricated from other than steel or wood.

3.2 INSTALLATION

A. Mounting Heights: Mount door hardware units at the following heights, unless specifically indicated on the drawings or required to comply with governing regulations:

1. Locks and Latches: 38 inches (956 mm) to center of lever from finish floor.
2. Door Pulls: As shown.
3. Butt Hinges: 10 inches (254 mm) to bottom of lowest hinge from finish floor; 5 inches (127 mm) to top of upper hinge from top of door; space intermediate hinges equally between lower and upper hinges.

B. Install each door hardware item to comply with manufacturer's written instructions. Install overhead surface closers for maximum degree of opening obtainable. Place on room side of corridor doors, stair side of stair doors, secondary corridor side of doors between corridors. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be finished, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

C. Do not install permanent key cylinders in locks until the time of preliminary acceptance by the Owner. At the time of preliminary acceptance, and in the presence of the Owner's representative, permanent key all lock cylinders. Record and file all keys in the key control system , and turn system over to Owner for sole possession and control.

D. Key control storage system shall be installed where directed by the Owner.

3.3 ADJUSTING

A. Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every hardware component. Replace hardware components that cannot be adjusted to operate as intended. Adjust door control devices to compensate for building stack pressures and final operation of forced air mechanical equipment and to comply with referenced accessibility requirements.

3.4 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation. Clean hardware components as necessary to restore proper finish. Provide protection during the progress of the work and maintain conditions that ensure door hardware is in perfect working order and without damage or deterioration at time of Substantial Completion.

END OF SECTION 08711
08711/2-98/ttt

SECTION 08800 - GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:
   1. Storefront framing.

B. Refer to Division 8 Section Aluminum Entrances and Storefronts", and "All-Glass Entrances and Storefronts" for requirements applicable to single subcontract responsibility for glazing.

1.2 PERFORMANCE REQUIREMENTS

A. General: Provide and install glazing systems capable of withstanding impact loads without failure of any kind, including loss or breakage of glass, failure of seal or gaskets, exudation of glazing sealants, and excessive deterioration of glazing materials.

B. Glass Design: Glass thicknesses and heat treatments indicated are minimum requirements. Glazing details shown are for convenience of detailing only and are to be confirmed by the Contractor relative to cited standards and final framing details. Confirm glass thicknesses and heat treatments, as required to meet the performance and testing requirements specified in Division 8 Section, "Aluminum Entrances and Storefronts", and "All-Glass Entrances and Storefronts".

1.3 SUBMITTALS

A. Product Data: Submit product data for each glass product and glazing material indicated.

B. Glass Manufacturers Letter: The glass manufacturer shall submit a letter certifying that he has reviewed the glazing details proposed for the project, including the use of gaskets and sealants, and that each product to be furnished is recommended for the application shown.

C. Samples: Label samples to indicate product, characteristics, and locations in the work.

D. Product Certificates: Signed by manufacturers of glass and glazing products certifying that products furnished comply with requirements.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for Project and whose work has resulted in construction with a record of successful in-service performance.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials according to manufacturer's written instructions and as needed to prevent damage to glass and glazing materials.

PART 2 - PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

A. Refer to the finish schedules on the drawings for the extent of glass types and locations. The Contractor shall confirm the levels of heat treatment required for each glass type scheduled as contained in Articles Performance Requirements, Submittals and Quality Assurance.

2.2 HEAT-TREATED FLOAT GLASS

A. General: Heat treat glass where required to meet safety glazing requirements.

B. Sizes and Cutting: Prior to heat treatment, cut glass to required sizes as determined by accurate measurement of openings to be glazed, making allowance for required edge clearances. Cut and process edges in accordance with glass manufacturer's recommendations. Do not cut or treat edges in the field.

C. Fully Tempered Glass: Provide glass complying with ASTM C1048 Kind FT and meeting the requirements of ANSI Z97.1. Surface compression shall be equal to or greater than 10,000 psi (69 MPa).

2.3 GLAZING SEALANTS

A. Gasket, Blocking, and Spacer Wet Glazing Materials: Silicone, compatible with and adherent to each material it will be in contact with, as recommended by the manufacturer to fulfill performance requirements.

2.4 GLAZING GASKETS

A. Dense Compression Gaskets: Continuous extruded EPDM with cross sectional profile, physical properties, and tolerances as recommended by the glass manufacturer, and as required, to comply with the performance requirements specified and shown all in compliance with the applicable provisions of ASTM C864, Option II.

2.5 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces, and wet glazing materials, contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks: EPDM complying with ASTM C864 (Option II), blocks, 85 +/- 5 Shore A durometer hardness, 1/16 inch (1.5-mm) less than the channel width, and length based on the

face area the glass unit to be supported in accordance with GANA standards and glass manufacturer recommendations but not less than 4 inches (101.6 mm).

2.6 FABRICATION OF GLASS AND OTHER GLAZING PRODUCTS

A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing standard, to comply with system performance requirements.

1. Edge and Surface Conditions: Comply with the recommendations of AAMA "Structural Properties of Glass" for "clean-cut" edges, except comply with manufacturer's recommendations when they are at variance therewith.

B. Cutting: Do not nip glass edges. Edges may be wheel cut or sawed and seamed at manufacturer's option. For glass to be cut at site, provide glass 2 inches (50.8 mm) larger than required in both dimensions, so as to facilitate cutting of clean cut edges without the necessity of seaming or nipping. Do not cut, seam, nip or abrade heat-treated glass.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine glass framing, with glazier and glass framing erector present, for compliance with the following:

1. Compliance with the specified manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
2. Minimum required face or edge clearances.
3. Effective sealing between joints of glass-framing members.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean glazing stops, glazing channels, and rabbets which will be in contact with the glazing materials immediately before glazing. Remove coatings which might fail in adhesion or interfere with bond of sealants. .Comply with manufacturers instructions for final wiping of surfaces immediately before application of primers. Wipe metal surfaces with IPA (isopropyl alcohal).

1. Prime surfaces to receive glazing compounds. When priming, comply with wet glazing manufacturers recommendations.

B. Inspect each piece of glass immediately before installation. Do not install any pieces which are improperly sized or have damaged edges, scratches or abrasion or other evidence of damage. Remove labels from glass immediately after installation.

3.3 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

1. All glass units shall be installed in accordance with the glass manufacturers recommendations.

a. Butt Glazed Interior Monolithic Glass Units: Mask the surfaces on both sides of the joints to be glazed. Provide wood dowel, with a diameter of at least 3 times of the joint width, wrapped in polyethylene tape, and firmly taped to interior face of glass unit to be glazed to act as a back-up during glazing operation. Place glazing sealant and tool face of sealant slightly concave using extreme care not to chip or otherwise abrade corners of glass. Allow sealant to fully cure before removing dowel.

B. Glazing channel dimensions, as indicated on Drawings, provide necessary bite on glass, minimum edge and face clearances, with reasonable tolerances. Adjust as required by Project conditions during installation.

C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

D. Apply primers to surfaces indicated to receive glazing materials.

E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless more stringent requirements are recommended by glass manufacturer.

1. For Glass Units Less Than 72 inches (1830 mm): Locate setting blocks at sill one-quarter of the width in from each end of the glass unless otherwise recommended by the glass manufacturer.
2. For Glass Units 72 inches (1830 mm) or Greater: Locate setting blocks at sill one-eighth of the width in from each end of the glass, but not less than 6 inches (150 mm), unless otherwise recommended by the glass manufacturer.

F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

G. Set glass lites with uniform pattern, draw, bow, and similar characteristics, producing the greatest possible degree of uniformity in appearance on the entire wall elevation.

1. Set glass units with void between edge of units and glazing channel.

H. Where wedge-shaped gaskets are driven into one side of channel to pressurize gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

I. Miter cut gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away.

3.4 PROTECTION AND CLEANING

A. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in any way and from any source, including natural causes, accidents, and vandalism.

B. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer.

END OF SECTION 08800
08800/11-99/ttt

SECTION 09260 - GYPSUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes gypsum board assemblies.

1.2 ASSEMBLY PERFORMANCE REQUIREMENTS

A. Gypsum Board Assembly Deflections:

1. Typical Walls: Wall assemblies shall be constructed for deflection not to exceed 1/240 of the wall height when subjected to a positive and negative pressure of 5 psf.

2. Ceilings, bulkheads, soffits, ceiling transitions, ledges, and coves shall be constructed for a deflection not to exceed 1/360 of the distance between supports.

1.3 SUBMITTALS

A. Product Data: Submit product data for each product indicated.

B. Samples: Submit full size samples in 12-inch- (300-mm-) long lengths for each exposed trim accessory indicated.

1.4 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: For gypsum board assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

1. Fire-Resistance-Rated Assemblies: Indicated by design designations from UL's "Fire Resistance Directory."

B. Sound Transmission Characteristics: For gypsum board assemblies with STC ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by a qualified independent testing agency.

C. STC-Rated Assemblies: Indicated by design designations from GA-600, "Fire Resistance Design Manual."

D. Single-Source Responsibility for Panel Products: Obtain each type of gypsum board and other panel products from a single manufacturer.

E. Single-Source Responsibility for Finishing Materials: Obtain finishing materials from either the same manufacturer that supplies gypsum board and other panel products or from a manufacturer acceptable to gypsum board manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.

B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Stack gypsum panels flat to prevent sagging.

C. Handle gypsum board to prevent damage to edges, ends, and surfaces. Do not bend or otherwise damage metal corner beads and trim.

1.6 PRE-INSTALLATION MEETING

A. Prior to start of each type of gypsum wallboard system, and at the Contractors direction, meet at the site and review the installation procedures and coordination with other work. Meeting shall include Contractor, Architect and major material manufacturer as well as the Installer and other subcontractors whose work must be coordinated with the gypsum wallboard work.

1.7 PROJECT CONDITIONS

A. Comply with ASTM C840 requirements or wallboard material manufacturer's written recommendations, whichever are more stringent.

B. Installation of wallboard joint treatments shall not start until the space to receive wall board joint treatments is heated to maintain a continuous and uniform temperature of not less than 55 degrees F, from one week prior to beginning of joint treatment until joint treatment is completed and thoroughly dry. Ventilation, either natural or supplied by fans, circulators or air conditioning systems shall be provided to remove excess moisture during joint treatment. Temperature requirements may be waived only on recommendation of wallboard materials manufacturer.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. General: For fire rated assemblies, provide materials, including accessories and fasteners produced by one manufacturer, or, when products of more than one manufacturer are used in a rated system, they shall be acceptable to authorities having jurisdiction.

2.2 STEEL SUSPENDED CEILING FRAMING

A. Components, General: Provide steel framing members sized and spaced as indicated but not less than that required to comply with ASTM C 754 under the maximum deflection conditions specified under Article 'Assembly Performance Requirements'.

B. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.0625-inch- (1.59-mm-) diameter wire, or double strand of 0.0475-inch- (1.21-mm-) diameter wire.

C. Hangers: As follows:

1. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.162-inch (4.12-mm) diameter.

D. Furring Channels (Furring Members): Commercial-steel sheet with ASTM A 653/A 653M, G40 (Z120), hot-dip galvanized zinc coating.

1. Cold Rolled Channels: 0.0538-inch (1.37-mm) bare steel thickness, with minimum 1/2-inch- (12.7-mm-) wide flange, 3/4 inch (19.1 mm) deep.

2. Steel Studs: ASTM C 645, 0.0312 inch (0.79 mm) minimum base metal thickness and minimum depth as required to suit deflection criteria.

3. Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch (22.2 mm) deep.

a. Minimum Base Metal Thickness: 0.0312 inch (0.79 mm).

4. Resilient Furring Channels: 1/2-inch- (12.7-mm-) deep members designed to reduce sound transmission.

E. Grid Suspension System for Interior Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.

2.3 STEEL PARTITION AND SOFFIT FRAMING

A. General: Provide steel framing members sized and spaced as indicated but not less than that required to comply with ASTM C 754 under the maximum deflection conditions specified under Article 'Assembly Performance Requirements'.

1. In areas where top of partitions are dependent on ceiling system for lateral support, coordinate design and installation to comply with the above deflection limitation.
2. Steel Sheet Components: Complying with ASTM C 645 requirements for metal and with ASTM A 653/A 653M, G40, hot-dip galvanized zinc coating.

B. Steel Studs and Runners: ASTM C 645, in minimum depth indicated in partition type details.

a. Minimum Base Metal Thickness:

1) Typical: As required to comply with deflection criteria.
2) Partitions Supporting Wall Mounted Casework: 16 ga. minimum.

2. Depth: As indicated.

C. Deflection Track: ASTM C645 top runner with 2 inch (50.8 mm) deep flanges. Steel sheet top runner manufactured to prevent cracking of gypsum board applied to interior partitions resulting from deflection of structure above; in thickness indicated for studs and in width to accommodate depth of studs; one of the following:

1. Delta Star, Inc., Superior Metal Trim; Superior Flex Track System (SFT).
2. Metal-Lite, Inc.; Slotted Track.
3. The Steel Network, Inc; VertiClip SLD Series or VertiTrack VTD Series.

D. Flat Strap and Backing Plate: 36 inch wide steel sheet for blocking and bracing required for the attachment of surface mounted items and accessories indicated.

1. Minimum Base Metal Thickness: 0.0312 inch (0.79 mm).

E. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members securely to substrates involved; complying with the recommendations of the gypsum board manufacturers for applications indicated..

2.4 INTERIOR GYPSUM WALLBOARD

A. Panel Size: Provide in maximum lengths and widths available that will minimize joints in each area and correspond with support system indicated.

B. Gypsum Wallboard: ASTM C 36 or ASTM C1396/C1396M.

1. Type X:

a. Thickness: 5/8 inch (15.9 mm).
b. Long Edges: Tapered.
c. Location: Where required for fire-resistance-rated assembly.

C. Sag-Resistant Gypsum Wallboard for Interior Ceilings: ASTM C 36 or ASTM C1396/C1396M, manufactured to have more sag resistance than regular-type gypsum board.

1. Thickness: 1/2 inch (12.7 mm).
2. Long Edges: Tapered.
3. Location: Ceiling surfaces.

2.5 TRIM ACCESSORIES

A. Interior Steel Trim Accessories: ASTM C 1047; formed metal sheet steel zinc coated by hot dipped process. Shapes indicated below by reference to Fig. 1 designations in ASTM C1047.

1. Cornerbead: Use at outside corners.
2. LC-Bead with both face and back flanges to receive joint compound; use at exposed panel edges.
3. U-Bead with face and back flanges; face flange formed to be left without application of joint compound: Use where indicated.
4. Curved-Edge Cornerbead: With notched or flexible flanges; use at curved openings.

2.6 JOINT TREATMENT MATERIALS

A. General: Provide joint treatment materials complying with ASTM C 475 and the recommendations of both the manufacturers of the wallboard products and joint treatment materials for each application indicated.

B. Joint Tape:

1. Interior Gypsum Wallboard over Metal Studs: Paper.
2. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, flanges of trim accessories, and fasteners, use setting-type taping compound.
3. Second coat: For filling over tape, beads and fasteners. Use setting-type, sandable topping compound.
4. Third coat: For finishing over tape, beads and fasteners. Use drying-type, all-purpose compound.
5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.

2.7 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Acoustical Sealant for Exposed and Concealed Joints: Nonsag, paintable, nonstaining, latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

C. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

1. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

D. Wood Blocking and Trim Not Concealed in Partition Construction: Refer to Section 06402, INTERIOR ARCHITECTURAL WOODWORK.

E. Wood Blocking and Plywood Concealed in Partition Construction: Fire retardant treated, refer to Section 06105, MISCELLANEOUS CARPENTRY.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates to which gypsum board assemblies attach or abut, installed door frames and structural framing with Installer present for compliance with requirements for installation tolerances and other conditions affecting performance of assemblies specified in this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLING STEEL FRAMING, GENERAL

A. General: Install steel framing to comply with ASTM C754, ASTM C840 and the gypsum board manufacturers recommendations, where standards conflict the more stringent shall apply.

B. Install supplementary framing, blocking, backerplates and bracing at locations in gypsum board assemblies which are indicated to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction. Comply with details indicated and with

gypsum board manufacturer's written recommendations or, if none available, with United States Gypsum's "Gypsum Construction Handbook."

C. Isolate steel framing from building structure to prevent transfer of loading imposed by structural movement.

1. Isolate ceiling assemblies where they abut or are penetrated by building structure.
2. Isolate partition framing and wall furring where it abuts structure, except at floor. Install slip-type joints at head of assemblies that avoid axial loading of assembly and laterally support assembly.

a. Use deep-leg deflection track where indicated.
b. Use proprietary firestop track where indicated.

3.3 INSTALLING STEEL SUSPENDED CEILING FRAMING

A. Suspend ceiling hangers from building structure as follows:

B. Suspended Ceiling Framing:

1. Suspend ceiling hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with the location of hangers required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
3. Attach hangers to structural members. Do not support ceilings from or attach hangers to permanent metal forms, steel deck tabs, steel roof decks, ducts, pipes, or conduit.
4. Secure wire hangers by looping and wire-tying, to eyescrews, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause them to deteriorate or otherwise fail.
5. Secure rod and flat hangers to structure, including intermediate framing members, by attaching to devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.

C. Installation Tolerances: Install steel framing components for suspended ceilings so members for panel attachment are level to within 1/8 inch in 12 feet (3 mm in 3.6 m) measured lengthwise on each member and transversely between parallel members.

D. Wire-tie or clip furring channels to supports, as required to comply with requirements for assemblies indicated.

E. Install suspended steel framing components in sizes and spacings indicated, but not less than that required by the referenced steel framing and installation standards unless more stringent spacings are recommended by the gypsum board manufacturer.

F. Grid Suspension System: Attach perimeter wall track or angle where grid suspension system meets vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.

3.4 INSTALLING STEEL PARTITION AND SOFFIT FRAMING

A. Install continuous runners (tracks) sized to match studs at floors, ceilings, and structural walls and columns where gypsum board stud assemblies abut other construction. Secure runners to substrates with fasteners spaced a maximum of 24" o.c. unless closer spacing is recommended by the framing manufacturer for the floor and ceiling construction involved. Provide fasteners at all corners and ends of runner tracks.

1. Where studs are installed directly against exterior walls, install foam gasket isolation strip between studs and wall.

B. Installation Tolerance: Install each steel framing and furring member so fastening surfaces vary not more than 1/8 inch (3 mm) from the plane formed by the faces of adjacent framing.

C. Extend partition framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings and at partial height partitions. Continue framing over frames for doors and openings and frame around ducts penetrating partitions above ceiling to provide support for gypsum board.

1. Cut studs 1/2 inch (13 mm) short of full height to provide perimeter relief.
2. For fire-resistance-rated and STC-rated partitions that extend to the underside of floor/roof slabs and decks or other continuous solid-structure surfaces to obtain ratings, install framing around structural and other members extending below floor/roof slabs and decks, as needed to support gypsum board closures and to make partitions continuous from floor to underside of solid structure.
3. Terminate partition framing at suspended ceilings where indicated.
4. Terminate partial height partition framing as indicated.

D. Install steel studs and furring in sizes and at spacings indicated but not less than that required by the referenced steel framing installation standard to comply with maximum deflection and minimum loading requirements specified, unless more stringent requirements are recommended by the gypsum board manufacturer:

1. Space studs 16 inches o.c., unless otherwise indicated.

E. Install steel studs so flanges point in the same direction and leading edge or end of each panel can be attached to open (unsupported) edges of stud flanges first.

F. Install backerplates for support of wall mounted items.

G. Frame door openings to comply with GA-600 and with gypsum board manufacturer's applicable written recommendations, unless otherwise indicated. Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.

1. Install two studs at each jamb, unless otherwise indicated. Install one additional stud no more than 6” from jamb studs at single doors greater than 4’-0” and at all pairs of doors.

2. Install cripple studs at head adjacent to each jamb stud. Provide runner track and typical studs above door openings with studs spaced not more than 24" o.c.
3. At all welded frames with fixed anchor clips secure stud reinforcing to jamb anchor clips with not less than two self tapping screws per clip.
4. Extend jamb studs through suspended ceilings and attach to underside of floor or roof structure above.

H. Frame openings other than door openings the same as required for door openings, unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.

3.5 APPLYING AND FINISHING PANELS

A. Gypsum Board Application and Finishing Standards: Install and finish gypsum panels to comply with ASTM C 840, GA-216, and the gypsum wallboard manufacturer's recommendations, where standards conflict, the more stringent shall apply.

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to the greatest extent possible and at right angles to framing, unless otherwise indicated. Install ceiling board panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in the central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
2. On partitions/walls, apply gypsum panels vertically (parallel to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints or avoid them entirely.

    a. Stagger abutting end joints not less than one framing member in alternate courses of board.
    b. At high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.

C. Single-Layer Fastening Methods: Apply gypsum panels to supports with steel drill screws.

D. Install gypsum panels with face side out. Do not install imperfect, damaged, or damp panels. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.

E. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions.

F. Attach gypsum panels to steel studs so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

G. Attach gypsum panels to framing provided at openings and cutouts.

H. Cover both faces of steel stud partition framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

1. Fit gypsum panels around ducts, pipes, and conduits.
2. Where partitions intersect open concrete coffers, concrete joists, exterior and interior wall kickers, and other structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by coffers, joists, and other structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.
3. Where chase walls are shown, provide bracing between parallel rows of studs. Unless otherwise shown, provide gypsum wallboard braces no less than 1/2" thick x 12" wide and cut to width of chase. Locate at quarter points in wall height between each pair of parallel studs. Fasten with not less than 3 screws at each stud.

I. Isolate perimeter of non-load-bearing gypsum board partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- (6.4- to 12.7-mm-) wide spaces at these locations, and trim edges with U-bead edge trim where edges of gypsum panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

J. STC-Rated Assemblies: Seal construction at perimeters, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through gypsum board assemblies, including sealing partitions above acoustical ceilings.

K. Cut openings in wallboard for electrical outlets, piping and other penetrations. Maintain close tolerances so that edges will be covered by plates and escutcheons. Cut both face and back paper. Do not install electrical outlets back to back on opposing sides of partitions.

L. Space fasteners in gypsum panels according to referenced gypsum board application and finishing standard and manufacturer's written recommendations.

1. Space screws a maximum of 12 inches (304.8 mm) o.c. for vertical applications.
2. Space fasteners in panels that are tile substrates a maximum of 8 inches (203.2 mm) o.c.
3. Install fasteners not less than 3/8" from ends or edges of wallboard sheets, spacing fasteners opposite each other on adjacent ends or edges.
4. Begin fastening from center of wallboard and proceed toward edges and corners.
5. Apply pressure on surface of wallboard adjacent to fasteners being driven to ensure that wallboard will be secured tightly to supporting members.

    a. Drive fastener with shank perpendicular to face of board.
    b. Drive screws with a power screwdriver as recommended by wallboard manufacturer. Set heads of screws slightly below surface of paper without cutting paper.

3.6 INSTALLING TRIM ACCESSORIES

A. General: Fasten trim accessories according to manufacturer's written instructions for type, length, and spacing of fasteners.

B. Install corner beads at external corners.

C. Install interior trim accessories where edge of gypsum panels would otherwise be exposed or semiexposed. Provide interior trim accessories with face flange formed to receive joint compound.

D. Install aluminum trim accessories where indicated.

3.7 FINISHING GYPSUM BOARD ASSEMBLIES

A. General: Apply joint treatment at gypsum board joints, flanges of interior trim and aluminum trim accessories, interior angles, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration and levels of gypsum board finish indicated. Produce surfaces free of tool marks and ridges ready for decoration of type indicated. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints and damaged surface areas.

C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.

D. Gypsum Board Finish Levels: Finish panels to levels indicated below, according to ASTM C 840, for locations indicated:

1. Level 1: Embed tape at joints in ceiling plenum areas, concealed areas, and where indicated, unless a higher level of finish is required for fire-resistance-rated assemblies and sound-rated assemblies.

3.8 CLEANING AND PROTECTION

A. Clean floors of all wallboard debris and leave broom clean. Excess material, scaffolding, tools and other equipment are to be removed upon completion of the work.

B. Provide final protection and maintain conditions that ensures gypsum board assemblies remain without damage or deterioration at time of Substantial Completion. .

END OF SECTION 09260
09260/11-99/ttt

SECTION 09511 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes acoustical panels and exposed suspension systems for ceilings.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Coordination Drawings: Drawn to scale and coordinating acoustical panel ceiling installation with hanger attachment to building structure and ceiling mounted items:

C. Samples: For each exposed finish.

D. Product test reports.

E. Research/evaluation reports.

F. Maintenance data.

1.3 QUALITY ASSURANCE

A. Acoustical Testing Agency Qualifications: An independent testing laboratory or an NVLAP-accredited laboratory.

B. Preinstallation Conference: Conduct conference at Project site.

1.4 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Acoustical Ceiling Panels: Full-size panels equal to 2.0 percent of quantity installed.
2. Suspension System Components: Quantity of each exposed component equal to 2.0 percent of quantity installed.

PART 2 - PRODUCTS

2.1 ACOUSTICAL PANEL CEILINGS, GENERAL

A. Acoustical Panel Standard: Comply with ASTM E 1264.

B. Metal Suspension System Standard: Comply with ASTM C 635.

C. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

1. Anchors in Concrete: Expansion anchors fabricated from corrosion-resistant materials, with holes or loops for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to five times that imposed by ceiling construction, as determined by testing per ASTM E 488 or ASTM E 1512 as applicable, conducted by a qualified testing and inspecting agency.

D. Wire Hangers, Braces, and Ties: Zinc-coated carbon-steel wire; ASTM A 641/A 641M, Class 1 zinc coating, soft temper.

1. Size: Select wire diameter so its stress at 3 times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch- (2.69-mm-) diameter wire.

E. Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension system runners.

2.2 ACOUSTICAL PANELS FOR ACOUSTICAL PANEL CEILING

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

B. Products: Subject to compliance with requirements, provide one of the following:

1. Armstrong World Industries, Inc.; As scheduled.

C. Classification: Provide fire-resistance-rated panels complying with ASTM E 1264 for type and form as follows:

1. Type and Form: Type III, mineral base with painted finish; Form 1, nodular.

D. Color: White.

E. Edge/Joint Detail: As scheduled.

F. Thickness: 7/8 inch (22 mm)

G. Modular Size: 48 x 48 inches.

2.3 METAL SUSPENSION SYSTEM FOR ACOUSTICAL PANEL CEILING

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

B. Products: Subject to compliance with requirements, provide one of the following:

1. Armstrong World Industries, Inc.; As scheduled.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with ASTM C 636 and seismic design requirements indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."

B. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders.

C. Suspend ceiling hangers from building's structural members, plumb and free from contact with insulation or other objects within ceiling plenum. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers, use trapezes or equivalent devices. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.

1. Do not support ceilings directly from permanent metal forms or floor deck; anchor into concrete slabs.
2. Do not attach hangers to steel deck tabs.

D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels. Screw attach moldings to substrate at intervals not more than 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3.2 mm in 3.6 m). Miter corners accurately and connect securely.

E. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

F. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.

END OF SECTION 09511

SECTION 09639 - STONE FLOORING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes dimension stone flooring..
   1. See Division 7 Section for waterproofing membrane to be installed under stone flooring.
   2. See Division 9 Section "Dimension Stone Tile" for stone tile used as flooring.
   3. See Division 9 Section "Interior Stone Facing" for stone applied to walls, countertops and as trim.

1.2 PERFORMANCE REQUIREMENTS

A. Static Coefficient of Friction: For stone flooring installed on walkway surfaces, provide finished installation with the following values as determined by testing identical installations and products per ASTM C 1028:

   1. Level Surfaces: Minimum 0.6.
   2. Step Treads: Minimum 0.6.
   3. Ramp Surfaces: Minimum 0.8.

1.3 SUBMITTALS

A. Product Data: For each variety of stone, stone accessories, and other manufactured products indicated.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other Work.

C. Samples: Submit two sets of samples; one set of samples will be retained by Architect; make another set of samples available at the Construction site.

D. Test Results: For testing indicated. For ASTM tests performed on stone, Samples taken from actual pallets of stone proposed for installation. Indicate a comparison of test data to specified test values required in this Section.

E. Qualification data.

F. Maintenance data.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An installer with not less than five years experience, who employs experienced mechanics and stone fitters who are skilled in installing stone paving and flooring similar in material, design, and extent to those indicated for this Project and whose projects have a record of successful in-service performance.

B. Testing Agency Qualifications: An independent testing agency, acceptable to the Owner, qualified according to ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

2.2 STONE, GENERAL

A. Varieties and Sources: Subject to compliance with requirements, provide stone varieties from sources specified in Part 2 "Stone Types" Article.

1. If descriptions of two or more stone types are identical except for finish, provide the same variety from the same source for each type.

B. Match Architect's samples for variety, color, finish, and other stone characteristics relating to aesthetic effects.

C. Match existing stone for variety, color, and finish where stone is indicated to match existing.

D. Provide stone that is free of cracks, seams, and starts impairing structural integrity or function.

E. Provide stone from a single quarry for each variety of stone required.

1. For each stone variety, provide matched blocks extracted from contiguous locations in a single bed of quarry stratum unless Architect approves stone from blocks randomly selected for aesthetic effect.

F. Quarry stone in a manner to ensure that as-quarried block orientations yield finished stone with required characteristics.

2.3 MORTAR MATERIALS

A. Portland Cement: ASTM C 150, Type I or II.

1. Low-Alkali Cement: Not more than 0.60 percent total alkali when tested according to ASTM C 114.

B. Hydrated Lime: ASTM C 207, Type S.

C. Aggregate: ASTM C 144 and as follows:

1. For pointing mortar, use aggregate graded with 100 percent passing No. 16 (1.18-mm) sieve.
2. White Aggregates: Natural white sand or ground white stone.
3. Colored Aggregates: Natural-colored sand or ground marble, granite, or other sound stone; of color necessary to produce required mortar color.

D. Mortar Pigments: Natural or synthetic iron oxides, compounded for use in mortar mixes and with a record of satisfactory performance in stone mortars.

1. Manufacturers:

a. Bayer Corporation; Industrial Chemicals Div.
b. Davis Colors.
c. Lafarge Corporation.
d. Solomon Colors.

E. Latex additive (water emulsion), serving as replacement for part of or all gaging water, of type specifically recommended by latex-additive manufacturer for use with job-mixed portland cement mortar and not containing a retarder.

F. Thin-Set Mortar:

1. Latex-Portland Cement Mortar: ANSI A118.4.

G. Water: Potable.

2.4 GROUT

A. Source Limitations: For each tile installation, obtain compatible formulations of setting and grouting materials containing latex or latex additives from a single manufacturer.

B. Grout Colors: As scheduled.

C. Latex-Portland Cement Grout: ANSI A118.6, for materials described in Paragraph H-2.4, and as follows:

1. Factory-Prepared, Dry-Grout Mixture: Factory-prepared mixture of portland cement; dry, redispersible, ethylene vinyl acetate additive; and other ingredients to produce the following:

a. Unsanded grout mixture for joints 1/8 inch (3 mm) and narrower.

2. Manufacturers:
a. Mapei Corporation.

2.5 ACCESSORIES

A. Water-Cleanable Epoxy Adhesive: ANSI A118.3

B. Cleavage Membrane: Polyethylene sheeting, ASTM D 4397, 4.0 mils (0.1 mm) thick**;** or asphalt felt, ASTM D 226, Type I (No. 15).

C. Divider Strips and Edging: Metal or combination of metal and PVC or neoprene base, designed specifically for flooring applications, in longest lengths available, and as follows:

1. Exposed-Edge Material: White zinc alloy.
2. Cross-Section Profile: Angle or L-shape.
3. Height: Equal to stone thickness plus depth of setting bed.
4. Width: 1/8 inch (3 mm).
5. Control-Joint Filler: Neoprene, in color selected by Architect from manufacturer's full range.

D. Cleaner: Stone cleaner specifically formulated for stone types, finishes, and applications indicated, as recommended by stone producer. Do not use cleaning compounds containing acids, caustics, harsh fillers, or abrasives.

E. Elastomeric Sealants: Elastomeric sealants of base polymer and characteristics indicated that comply with applicable requirements in Division 7 Section "Joint Sealants."

1. Multipart, Pourable Urethane Sealant for Use T: ASTM C 920; Type M; Grade P; Class 25; Uses T, M, A, and, as applicable to joint substrates indicated, O.

a. Products:

1) Pecora Corporation; NR-200 Urexpan.
2) Tremco, Inc.; THC-900.

b. Color: Match stone.

F. Floor Sealer: Colorless, slip- and stain-resistant sealer that does not affect color or physical properties of stone surfaces, as recommended by stone producer for application indicated.

1. Manufacturers:

a. Custom Building Products.
b. HMK Stone Care Products.
c. Stone Care International.
d. Stone Medic, Div. VIC International Corporation.

2.6 MORTAR MIXES

A. Mortar: Comply with referenced standards and with manufacturers' written instructions to produce mortar of uniform quality and with optimum performance characteristics.

1. Do not use admixtures, unless otherwise indicated. Do not use calcium chloride.
2. Mixing Pointing Mortar: Thoroughly mix cementitious and aggregate materials together before adding any water. Then mix again, adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for one to two hours. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within 30 minutes of final mixing; do not retemper or use partially hardened material.

B. Portland Cement-Lime Setting Mortar: ASTM C 270, Proportion Specification, Type N.

C. Latex-Modified Portland Cement Setting Mortar: Proportion and mix portland cement, aggregate, and latex additive to comply with written instructions of latex-additive manufacturer and as necessary to produce stiff mixture with a moist surface when bed is ready to receive stone.

D. Mortar Bed Bond Coat: Mix neat cement and latex additive to a creamy consistency.

E. Latex-Modified Portland Cement Bond Coat: Proportion and mix portland cement, aggregate, and latex additive to comply with latex-additive manufacturer's written instructions.

F. Pointing Mortar: Provide pointing mortar complying with requirements indicated above for setting mortar, including type.

1. Pigmented Pointing Mortar: Select and proportion pigments with other ingredients to produce color required. Do not exceed pigment-to-cement ratio of 1:10, by weight.
2. Colored-Aggregate Pointing Mortar: Produce color required by combining colored aggregates with portland cement of selected color.

G. Joint Grout: Comply with mixing requirements of referenced ANSI standards and manufacturer's written instructions.

PART 3 - EXECUTION

3.1 PREPARATION

A. Vacuum clean concrete substrates to remove dirt, dust, debris, and loose particles.

B. Remove substances from concrete substrates that could impair mortar bond.

C. Clean dirty or stained stone surfaces by thoroughly scrubbing with fiber brushes and then drenching with clear water. Use only mild cleaning compounds.

3.2 INSTALLATION, GENERAL

A. Do necessary field cutting as stone is set. Use power saws with diamond blades to cut stone. Cut lines straight and true, with edges eased slightly to prevent snipping.

B. Set stone to comply with Drawings and Shop Drawings.

C. Scribe and field-cut stone as necessary to fit at obstructions. Produce tight and neat joints.

D. Stone over Waterproofing: Carefully place stone and setting materials over waterproofing so protection materials are not displaced and waterproofing is not punctured or otherwise damaged.

1. Provide cork joint filler, where indicated, at waterproofing that is turned up on vertical surfaces or, if not indicated, provide temporary filler or protection until stone paving installation is complete.

E. Expansion- and Control-Joint Installation: Locate and install according to Drawings and Shop Drawings. Comply with joint-sealant installation specified in Division 7 Section "Joint Sealants."

3.3 INSTALLATION TOLERANCES

A. Tolerances for smooth-finished flooring:

1. Variation in Surface Plane of Flooring: Do not exceed 1/8 inch in 8 feet (3 mm in 2.5 m), 1/4 inch in 16 feet (6 mm in 5 m), or 3/8 inch (10 mm) maximum from level or slope indicated.

2. Variation in Plane between Adjacent Units (Lipping): Do not exceed 1/32-inch (0.8-mm) difference between planes of adjacent units.

B. Tolerances for heavily-textured flooring:

1. Variation in Surface Plane of Flooring: Do not exceed 1/4 inch in 8 feet (6 mm in 2.5 m), 1/2 inch in 16 feet (12 mm in 5 m), or 1/2 inch (13 mm) maximum from level or slope indicated.
2. Variation in Plane between Adjacent Units (Lipping): Do not exceed 3/16-inch (4.75-mm) difference between planes of adjacent units.

3.4 INSTALLATION OF STONE DIRECTLY OVER CONCRETE

A. Saturate concrete with clean water several hours before placing setting bed. Remove surface water about one hour before placing setting bed.

B. Apply mortar bed bond coat to damp concrete and broom to provide an even coating that completely covers the concrete. Do not exceed 1/16-inch (1.5-mm) thickness. Limit area of mortar bed bond coat to avoid its drying out before placing setting bed.

C. Apply mortar bed immediately after applying mortar-bed bond coat. Spread, tamp, and screed to uniform thickness at elevations required for setting stone to finished elevations indicated.

D. Mix and place only that amount of mortar bed that can be covered with stone before initial set. Cut back, bevel edge, and discard material that has reached initial set before stone can be placed.

E. Place stone before initial set of mortar occurs. Immediately before placing stone on setting bed, apply uniform 1/16-inch- (1.5-mm-) thick bond coat to bed or to back of each stone unit.

F. Tamp and beat stone to obtain full contact with setting bed and to bring finished surfaces within indicated tolerances. Set each unit in a single operation before initial set of mortar.

G. Rake out joints to depth required to receive grout as units are set.

H. Point joints after setting. Tool joints flat, uniform, and smooth, without visible voids.

3.5 INSTALLATION OF STONE OVER CLEAVAGE MEMBRANE

A. Place cleavage membrane over substrates indicated to receive stone, lapped at least 4 inches (100 mm) at joints.

B. Place reinforcing wire fabric over membrane, lapped at least one full mesh at joints and supported so mesh becomes embedded in middle of setting bed. Hold edges back from vertical surfaces approximately 1/2 inch (13 mm).

C. Place mortar bed over membrane with reinforcing wire fabric fully embedded in middle of mortar bed. Spread, tamp, and screed to uniform thickness at elevations required for setting stone to finished elevations indicated.

D. Mix and place only that amount of mortar bed that can be covered with stone before initial set. Cut back, bevel edge, and discard material that has reached initial set before stone can be placed.

E. Place stone before initial set of mortar occurs. Immediately before placing stone on setting bed, apply uniform 1/16-inch- (1.5-mm-) thick bond coat to bed or to back of each stone unit.

F. Tamp and beat stone to obtain full contact with setting bed and to bring finished surfaces within indicated tolerances. Set each unit in a single operation before initial set of mortar.

G. Rake out joints to depth required to receive grout as units are set.

H. Point joints after setting. Tool joints flat, uniform, and smooth, without visible voids.

3.6 STONE THRESHOLD INSTALLATION

A. At locations adjacent to stone flooring, install stone thresholds in same type of setting bed as abutting stone flooring, unless otherwise indicated.

1. Set thresholds in thin-set, latex-portland cement mortar to comply with ANSI A108.5 at locations where mortar bed would otherwise be exposed above other adjacent flooring.

B. Install stone stair treads to comply with "Installation of Stone Directly Over Concrete" Article.

3.7 GROUTING OF STONE FLOORING

A. Grout stone joints to comply with ANSI A108.10 and manufacturer's written instructions.

1. Do not use sanded grout for polished stone.

B. Grout joints as soon as possible after initial set of setting bed. Force grout into joints, taking care not to smear grout on adjoining stone and other surfaces. After initial set of grout, finish joints by tooling to produce a slightly concave polished joint, free of drying cracks.

C. Cure grout by maintaining in a damp condition for seven days except as otherwise recommended by latex-additive manufacturer.

3.8 SEALING MOVEMENT JOINTS

A. Movement Joint Installation Method: Comply with TCA EJ171. Locate movement joints and other sealant-filled joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.

1. Locate joints in stone surfaces directly above joints in concrete substrates.
2. Prepare joints and apply sealants specified herein:

a. Use Multipart, Pourable Urethane at horizontal traffic surfaces.

3. Provide bond breaker at joints and existing cracks.

3.9 CLEANING AND PROTECTION

A. Clean stone paving and flooring after setting and grouting are complete. Use procedures recommended by stone fabricator for types of application.

B. Apply sealer to cleaned stone flooring according to sealer manufacturer's written instructions.

C. Prohibit traffic from installed stone for a minimum of 72 hours.

D. Protect stone paving and flooring during construction with nonstaining kraft paper. Where adjoining areas require construction work access, cover stone paving and flooring with a minimum of 3/4-inch (20-mm) untreated plywood over nonstaining kraft paper.

END OF SECTION 09639
099638/11-99/dub

SECTION 09680 - CARPET

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes broadloom carpet.

1.2 STANDARDS

A. Except as modified by governing codes and by the Contract Documents, comply with the applicable provisions and recommendations of the following:

1. The Carpet and Rug Institute "The Carpet Specifiers' Handbook."

2. The Carpet and Rug Institute "CRI 104 Commercial Carpet Installation Standard."

1.3 SUBMITTALS

A. Product Data: Submit product data, specifications, installation instructions for materials specified herein and other data as may be required to show compliance with the Contract Documents. Include installation recommendations for each type of substrate required.

B. Shop Drawings: Submit shop drawings showing the following:

1. Existing floor materials to be removed.
2. Existing floor materials to remain.
3. Columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet.
4. Dye lots, pattern types, repeats, locations, pile direction, and starting points per floor.
5. Seam locations, types, and methods.
6. Type of installation.
7. Type, color, and location of insets and borders.
8. Type, color, and location of edge, transition, and other accessory strips.
9. Show details of cutouts.
10. Type of cushion.
11. Include on shop drawings dimensions which verify field conditions.
12. Transition, and other accessory strips.
13. Transition details to other flooring materials.

C. Samples: Submit samples showing full range of color, texture, and pattern variations expected. Prepare samples from same material to be used for the Work. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules. Submit the following:

1. Carpet: 24-inch- (600-mm-) square Samples of each carpet required.
2. Exposed Edge Stripping and Accessory: 12-inch- (300-mm-) long Samples.
3. Carpet Cushion: 6-inch- (150-mm-) square Sample.

4. Mitered Carpet Border Seam: 12-inch- (300-mm-) square Sample. Show carpet pattern alignment.

D. Maintenance Data: Submit copies of instructions for care, cleaning, maintenance and repair of carpeting.

1. Each carpet manufacturer shall meet with the authorized Building Services personnel in the presence of the Owner, to review the characteristics of his product and to recommend appropriate maintenance procedures, prior to occupancy of the finished spaces.

E. Warranties: Submit special warranties specified in this Section.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Engage a carpet installer, who has completed a minimum of three (3) projects over the last 10 years which were similar in material, design and extent to that indicated for the project - as determined by the Architect – and which have resulted in construction with a record of successful in service performance.

1. In the case where the Installer is actually a Dealer, it is understood that the terms Installer, Dealer, Carpeting Contractor and Contractor shall be one and the same for purposes of this Contract. He shall assume responsibility for all of the work, including acquisition of the materials from the manufacturers herein specified.

B. Mill Inspection: The carpeting may be inspected to determine compliance with the Contract Documents with respect to manufacture, materials, pattern and colors. Inspection may be made at the mill by a representative of the Architect and/or Owner at any time during the process of manufacture.

C. Sample Installations: Before installing carpet, install sample installations for each type of carpet installation required to demonstrate aesthetic effects and qualities of materials and execution. Install sample installations to comply with the following requirements, using materials indicated for the completed Work:

1. Size and Location: Provide 250 square foot sample installations in locations as directed by Architect. Subdivide the sample installation with one continuous seam of the type specified.

2. Demonstrate the proposed range of aesthetic effects and workmanship.

3. Obtain Architect's approval of sample installations before starting work.

4. Maintain sample installations during construction in an undisturbed condition as a standard for judging the completed Work.

5. Approved sample installations may become part of the completed Work if undamaged at time of Substantial Completion.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver carpeting in original mill protective wrapping with mill register numbers and tags attached.

B. Deliver other materials in manufacturers unopened containers identified with name, brand, type, grade, class, and other qualifying information.

C. Store materials in a dry location, in such a manner as to prevent damage.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not install carpet until wet work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use. Stack rolls horizontally no higher than two high on a flat surface.

B. Do not install carpet over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive and concrete slabs have pH range recommended by carpet manufacturer.

1.7 WARRANTY

A. Special Carpet Manufacturer's Warranty: Written warranty, signed by carpet manufacturer agreeing to replace carpet that does not comply with requirements or that fails within specified warranty period. Warranty does not include deterioration or failure of carpet due to unusual traffic, failure of substrate, vandalism, or abuse. Failures include, but are not limited to, more than 10 percent loss of face fiber, wear, static buildup in excess of 3.0 kV when tested under the Standard Shuffle Test at 70 degrees F. and 20% RH, edge raveling, tuft bind loss, shrinkage, zippering (wet or dry), and delamination. Warrantees shall be full term, not pro-rated for the specified warranty period.

1. Warranty Period: 10 years from date of Substantial Completion.

B. Special Carpet Cushion Warranty: Written warranty, signed by carpet cushion manufacturer agreeing to replace carpet cushion that does not comply with requirements or that fails within 10 years from date of Substantial Completion. Warranty does not include deterioration or failure of carpet cushion from unusual traffic, failure of substrate, vandalism, or abuse. Failure includes, but is not limited to, permanent indentation or compression.

C. Installation Warranty: Submit copies of written warranty signed by the carpet installer and Contractor, warranting the carpet installation, for a period of 2 years, that the carpeting will not tear, crack, separate, deteriorate or pull loose from substrate, or experience seam failure, ripples, scallops, pilling or puckering.

1.8 EXTRA MATERIALS AND ATTIC STOCK

A. Extra Materials: Furnish extra materials described below before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Carpet: Full-width rolls equal to 5 percent of amount installed for each type indicated, but not less than 10 sq. yd. (8.3 sq. m).

B. Attic Stock: Package and deliver usable remnants of carpet to the Owner's storage room as directed by the Owner at the conclusion of the job. Include pieces of broadloom 20 square feet in area or greater.

PART 2 - PRODUCTS

2.1 CARPET

A. Carpet Types: Provide manufacturers commercial grade broadloom carpet for 100% glue down installation. Refer to drawings and schedules for extent of each carpet type required.

2.2 CARPET CUSHION

A. Product as recommended in writing by the carpet manufacturer for the application indicated and which will not void the specified warranties.

2.3 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Portland cement based formulation provided by or recommended by the following. Do not use gypsum based compounds.

1. Carpet manufacturer.
2. Carpet cushion manufacturer.

B. Carpet Adhesives: Water-resistant, mildew resistant, and nonstaining, high solids, low VOC emitting formulations that are specifically recommended by the carpet manufacturer, as verified through compatibility and adhesion testing for the intended substrate and application, and that comply with flammability requirements for installed carpet:

C. Seaming Tape: Hot melt adhesive tape, 6" wide, recommended by the carpet mill as suitable for backing specified.

D. Seaming Cement: Water-resistant and flame-resistant carpet adhesive for sealing raw edges, seaming, reinforcing seams and patching. Provide fast drying, easy spreading carpet seaming adhesive having excellent aging characteristics recommended by the carpet manufacturer.

E. Metal Edge Strips: Extruded aluminum with mill finish of width shown, of height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints.

F. Carpet Edging: Provide homogenous vinyl or rubber composition carpet edging in single lengths wherever possible, keeping the number of joints or splices to a minimum. Provide in quantities and locations as job required based upon the recommended good practice of the industry; include in every location where carpet terminates and other flooring continues. Color to match adjacent carpet types.

G. Floor Sealer: Type as recommended and manufactured by the carpet manufacturer for the applications indicated.

PART 3 - EXECUTION

3.1 PRE-INSTALLATION MEETING

A. Prior to the installation, and at the Contractor's direction, meet at the project site to review the material selections, substrate preparations, installation procedures, coordination with other trades, special details and conditions, standard of workmanship, and other pertinent topics related to the Work. The meeting shall include the Owner, Architect, the Contractor, the installer, material manufacturer's representatives, and representatives of other trades or subcontractors affected by the installation.

3.2 PREPARATION

A. Coordinate the installation of carpet so as not to delay the occupancy of the site or interfere with the completion of construction.

B. Examine the substrates, adjoining construction and the conditions under which the Work is to be installed. Verify recommended limits for moisture content and alkalinity of concrete substrates with carpet manufacturer.

1. Moisture Content: Verify moisture content using a standard calcium chloride crystal test or a 1 yd. x 1 yd. clear plastic test. Perform testing at a frequency of not less than once every 1,000 square feet.

2. Alkalinity Test: Verify alkalinity of concrete substrates by drilling a 3/8" diameter hole approximately 1/4" deep, remove all residue; fill with distilled water, allow water to stand 3 minutes and test with a calibrated electronic meter or Ph paper. Perform testing at a frequency of not less than once every 1,000 square feet.

3. Alternative test procedures for moisture content and alkalinity may be acceptable subject to the carpet manufacturer’s review and written acceptance.

C. Concrete Subfloors: Verify that concrete slabs comply with the following:

1. Provide one of the following:

a. Remove coatings, including curing compounds, existing floor covering adhesive residues, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by the carpet manufacturer.

b. In lieu of mechanical substrate preparation methods the Contractor may utilize floor sealer materials and methods of the types and methods as recommended, in writing, by the carpet manufacturer. Apply sealer in number of coats, and at the spread rate, as required by the carpet manufacturer.

2. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by the carpet manufacturer.

3. Use leveling and patching compounds recommended by flooring manufacturer for filling cracks, holes and depressions in the substrate. Surface shall be smooth, level and at proper elevation. Remove ridges, roughness and protrusions from concrete surfaces by grinding.

D. Broom and vacuum clean substrates to be covered immediately before installing carpet.

E. Carpet installation shall not commence until painting and finishing work are complete and ceiling and overhead work is tested, approved, and completed.

F. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 INSTALLATION

A. 100% Direct Glue Down of Broadloom Carpet: Comply with the manufacturer's instructions, specified industry standards and recommendations, and as required to match the accepted sample installations.

1. Carpet Layout, Cutting and Edge Trim Seaming: Prior to applying adhesives, place seams at locations indicated on accepted shop drawings. All carpet rolls shall be installed in the exact roll number sequence as listed on the carpet rolls. Maintain direction of pattern, texture and lay of pile. Side to end seaming shall not be allowed. All edges of all rolls of carpet shall be finish trimmed prior to laying to assure a perfect seam condition and carpet match. All trimmed edges shall then be treated with latex seaming adhesive to assure that loose and cut yarns are not left to ravel or pull out.

a. Cut and fit carpet to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet manufacturer.

b. Extend carpet into closets and offsets, and under movable equipment of the rooms and spaces shown or scheduled to receive carpet, including recessed covers within those spaces.

c. Provide cutouts as required for removable access covers in substrates except do not cutout for floor closer cover plates. Bind edges neatly and secure to substrate. Cut only 3 sides wherever it is feasible to provide carpet flap in lieu of fully removable cutout.

d. At doorways, center seams under door in closed position; do not place seams perpendicular to door frame in direction of traffic through doorway.

e. Cut openings in carpet for electrical outlets, piping and other penetrations. Maintain close tolerances so that edges of carpet will be covered by plates and escutcheons.

f. Seams shall be located away from areas subject to pivoting traffic.

2. Apply adhesive in accordance with adhesive manufacturer's directions.

3. Adhere carpet with a full spread of adhesive. Ensure uniform bond over the entire area.

a. Butt carpet tightly together to form seams without gaps or entrapped pile yarns and aligned with adjoining rolls of carpet. Seams shall be pressed by hand and/or suitable tool to produce the best possible even top pile width-to-width. Adjacent widths of carpet must be installed to finish at exactly the same elevation.

b. Roll carpet uniformly, removing air pockets and bubbles.

c. If the pile of the carpet has been compressed while laying in storage, so that there appears to be a difference in color in adjacent widths of material, the Contractor shall neutralize the pile with a steam machine and obtain a uniform pile direction throughout by brushing the carpet while it is still damp, at no additional cost to the Owner.

4. Edge Strip Installation: Install edge strip at every location where edge of carpet is exposed to traffic, unless otherwise indicated. Unless otherwise directed by Architect install in single lengths and secure in accordance with manufacturer's directions.

5. Traffic over adhesive installations shall be restricted until adhesive has properly cured in accordance with the adhesive manufacturers recommendations.

3.4 CLEANING AND PROTECTION

A. Cleaning: As the carpeting is installed, remove and dispose of all trimmings, excess pieces of carpeting and laying materials from each area as it is completed. Vacuum carpeting with a commercial vacuum, having a cylindrical brush or beater bar and high suction. Remove adhesives, stains, and soil spots in accordance with the carpet manufacturers recommendations.

B. Protection: Protect carpeting against damage of every kind as damaged carpeting shall be rejected. Use non-staining cover material for protection. Tape joints of protective covering.

1. Plastic and polyethylene sheet protective coverings shall not be permitted over glue down installations.

2. Remove and replace rejected carpeting with new carpeting. At the completion of the work and when directed by the Architect, remove covering, vacuum clean carpeting and remove soiling and stains (if any) to the satisfaction of the Architect.

END OF SECTION 09680

SECTION 09922 - INTERIOR PAINTING (PROFESSIONAL LINE PRODUCTS)

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes surface preparation and field painting of exposed interior items and surfaces.

B. Paint exposed surfaces. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron supports, and surfaces of mechanical and electrical equipment that do not have a factory-applied final finish.

C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

D. See Division 1 Section "LEED Requirements" for additional LEED requirements.

1.2 DEFINITIONS

A. General: Standard coating terms defined in ASTM D 16 apply to this Section.

1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
2. Eggshell refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60-degree meter.
3. Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.
4. Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.

1.3 SUBMITTALS

A. Product Data: For each paint system indicated. Include block fillers and primers.

B. Samples for Verification: For each color and material to be applied, with texture to simulate actual conditions, on representative Samples of the actual substrate.

C. Qualification Data: For Applicator.

1.4 QUALITY ASSURANCE

A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

B. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.

C. Benchmark Samples (Mockups): Provide a full-coat benchmark finish sample for each type of coating and substrate required. Comply with procedures specified in PDCA P5.
1. Wall Surfaces: Provide samples on at least 100 sq. ft. (9 sq. m).
2. Final approval of colors will be from benchmark samples.

1.5 PROJECT CONDITIONS

A. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F (10 and 32 deg C).

B. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F (7 and 35 deg C).

C. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

1.6 EXTRA MATERIALS

A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.

1. Quantity: 5 percent, but not less than 1 gal. (3.8 L) or 1 case, as appropriate, of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

B. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
1. Sherwin-Williams Co. (Sherwin-Williams).

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.

C. Chemical Components of Interior Paints and Coatings: Provide products that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24) and the following chemical restrictions:

1. Flat Paints and Coatings: VOC content of not more than 50 g/L.

D. Colors: As indicated by manufacturer's designations.

2.3 INTERIOR PRIMERS

A. Interior Concrete and Masonry Primer: Factory-formulated alkali-resistant acrylic-latex interior primer for interior application.
1. Sherwin-Williams; PrepRite Masonry Primer B28W300: Applied at a dry film thickness of not less than 3.0 mils (0.076 mm).

B. Interior Gypsum Board Primer: Factory-formulated latex-based primer for interior application.
1. Sherwin-Williams; PrepRite Masonry Primer B28W300 Series: Applied at a dry film thickness of not less than 3.0 mils (0.076 mm).

C. Interior Wood Primer for Acrylic-Enamel and Semigloss Alkyd-Enamel Finishes: Factory-formulated alkyd- or acrylic-latex-based interior wood primer.
1. Sherwin-Williams; PrepRite Classic Interior Primer B28W101 Series: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).

D. Interior Wood Primer for Full-Gloss Alkyd-Enamel Finishes: Factory-formulated alkyd- or acrylic-latex-based interior wood primer.
1. Sherwin-Williams; PrepRite Classic Interior Primer B28W101 Series: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).

2.4 INTERIOR FINISH COATS

A. Interior Flat Acrylic Paint: Factory-formulated flat acrylic-emulsion latex paint for interior application.
1. Sherwin-Williams; SuperPaint Interior Latex Flat Wall Paint, A86 Series: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).

B. Interior Semigloss Acrylic Enamel: Factory-formulated semigloss acrylic-latex enamel for interior application.
1. Sherwin-Williams; SuperPaint Interior Latex Semi-Gloss Enamel A88 Series: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).

C. Interior Full-Gloss Acrylic Enamel: Factory-formulated full-gloss acrylic-latex interior enamel.
1. Sherwin-Williams; ProMar 200 Interior Latex Gloss Enamel B21W201: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).

D. Interior Full-Gloss Alkyd Enamel for Gypsum Board and Plaster: Factory-formulated full-gloss alkyd interior enamel.
   1. Sherwin-Williams; ProMar 200 Alkyd Gloss Enamel B35W200 Series: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).

E. Interior Full-Gloss Alkyd Enamel for Wood and Metal Surfaces: Factory-formulated full-gloss alkyd interior enamel.
   1. Sherwin-Williams; ProMar 200 Alkyd Gloss Enamel B35W200 Series: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).

2.5 INTERIOR WOOD STAINS AND VARNISHES

A. Open-Grain Wood Filler: Factory-formulated paste wood filler applied at spreading rate recommended by manufacturer.

   1. Benjamin Moore; Benwood Paste Wood Filler No. 238.
   2. Coronado; none required.
   3. ICI Dulux Paints; none required.
   4. Kelly-Moore; none required.
   5. M. A. B. Paint; Paste Wood Filler.
   6. Pittsburgh Paints; none required.
   7. Sherwin-Williams; Sher-Wood Fast-Dry Filler.
   8. Sherwin-Williams; none recommended.

B. Interior Wood Stain: Factory-formulated alkyd-based penetrating wood stain for interior application applied at spreading rate recommended by manufacturer.

   1. Benjamin Moore; Benwood Penetrating Stain No. 234.
   2. Coronado; 69-27 Oil Penetrating Wood Stain.
   3. ICI Dulux Paints; 1700-XXX WoodPride Interior Solventborne Wood Finishing Stain.
   4. Kelly-Moore; McCloskey Stain.
   5. M. A. B. Paint; Wood Stain 062 Line.
   6. Pittsburgh Paints; 77-560 Rez Interior Semi-Transparent Oil Stain.
   7. Sherwin-Williams; Wood Classics Interior Oil Stain A-48 Series.

C. Clear Sanding Sealer: Factory-formulated fast-drying alkyd-based clear wood sealer applied at spreading rate recommended by manufacturer.

   1. Benjamin Moore; Moore's Interior Wood Finishes Quick-Dry Sanding Sealer No. 413.
   2. Coronado; 81-10 Dual Seal.
   3. ICI Dulux Paints; 1902-0000 WoodPride Interior Satin Polyurethane Varnish.
   4. Kelly-Moore; 2164 E Z Sand Alkyd Q. D. Sealer.
   5. M. A. B. Paint; Minit Dri Sanding Sealer 037-005 Line.
   6. Pittsburgh Paints; 6-10 SpeedHide Quick-Drying Interior Sanding Wood Sealer and Finish.
   7. Sherwin-Williams; Wood Classics Fast Dry Sanding Sealer B26V43.

PART 3 - EXECUTION

3.1 APPLICATION

A. Comply with procedures specified in PDCA P4.

B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. Notify Architect about anticipated problems when using the materials specified over substrates primed by others.

C. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.

D. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning.

1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

E. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified. Provide barrier coats over incompatible primers or remove and reprime.

1. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.

    a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
    b. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters, cases, and paneling.
    c. If transparent finish is required, backprime with spar varnish.
    d. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on back side.
    e. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.

F. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.

1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
3. Use only thinners approved by paint manufacturer and only within recommended limits.

G. General Application: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.

1. Paint colors, surface treatments, and finishes are indicated in the paint schedules.
2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
3. Provide finish coats that are compatible with primers used.
4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, grilles, convector covers, covers for finned-tube radiation, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.
5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
6. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
8. Sand lightly between each succeeding enamel or varnish coat.

H. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
2. Omit primer over metal surfaces that have been shop primed and touchup painted.
3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.

I. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
3. Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.

J. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.

K. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.

L. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.

M. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

N. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.

1. Provide satin finish for final coats.

O. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

P. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.

1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

Q. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.

R. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.2 INTERIOR STAIN AND NATURAL-FINISH WOODWORK SCHEDULE

A. Stained Woodwork: As indicated stain applied per Manufacturer’s Recommendations.

END OF SECTION 09922
09922/11-99/dub

COMPARISON OF CONSUMER PAINT LINES AND PROFESSIONAL-COATING MATERIALS		
Attribute	**Consumer Paint Lines**	**Professional Coatings**
Product Availability	Hardware stores Home-improvement centers Local paint stores	Some local paint stores Manufacturer's warehouse Regional distribution centers
Colors Available	Wide choice of standard colors	Limited number of standard colors
Packaging Method	Quarts and 1-gal. (3.8-L) cans Occasionally, 5-gal. (18.9-L) cans	1- and 5-gal. (3.8- and 18.9-L) cans Occasionally, 55-gal. (208-L) drums
Cost	Varies, but generally more expensive than professional coatings	Generally less expensive than consumer lines
Application Methods	Brush or roller	Brush, roller, spray, painter's mitten, etc.
Ease of Use	Easy to apply by anyone	For professional application only
Material Quality	Varies among products	Varies among products

SECTION 10400 - SIGNS

PART 1 - GENERAL

1.0 SECTION INCLUDES

A. Description of all materials, fabrication standards, and installation services for the sign system defined within the Design Intent

1.1 SUMMARY OF WORK

A. Sign Fabricator will be held to furnish, all work as specified in the Design Intent Documents, & Specifications as provided by Project Architect. All fabrication, installation, structural engineering, schedule and sequence coordination, anchor and support devices, work process and product of subcontractors, and all accessories required in order to produce the complete sign system described.

B. Scope of work includes but is not limited to the following:
1. Interior signs applied to various substrates with adhesives, mechanical fasteners or both as required by weight, surface materials, moisture conditions, and durability considerations.

1.2 SUBMITTALS

A. Sign Layouts: Provide full-scale layouts for each sign type including text, symbol artwork and any other graphic elements as solid black with sign face outlined. Provide scaled layouts for all signs. All Sign Layouts should indicate the following: complete layout including proper character spacing and heights; dimensions of all layout elements relative to the sign panel and to one another; exact typeface and letterspacing.

B. Signing Warranty: Submit to Client for Owner's documentation, a 5 year written warranty (effective the date of final acceptance) covering all signs, signed by the Sign Fabricator and Installer, agreeing to repair or replace work which has failed as a result of defects in materials or workmanship or installation. Upon notification of such defects, within the warranty period, make necessary repairs or replacement at the convenience of Owner.

C. Maintenance and Operating Manuals: Submit two (2) copies for Owner's documentation and one (1) copy to Project Architect. Furnish complete manuals describing the materials, devices and procedures to be followed in operating, cleaning and maintaining the work. Include manufacturers' brochures and parts lists describing the actual materials used in the work, including metal alloys, finishes, electrical components and other major components. Include in the manual samples of all vinyls or films used, samples of all paints used, and all paint formulas used. Assemble manuals for component parts into single binders identified for each system.

1.3 QUALITY ASSURANCE

A. Mock-ups and Prototypes: Provide a mock-up (partial for large signs; complete for smaller signs) of each sign type requested. The requested sign types are on page A13.00. Utilize the same materials and installation methods in the mock-up as intended for the final work. Schedule the installation so that the mock-up may be examined, and any necessary adjustments made, prior to commencing fabrication of the final work. Replace unsatisfactory items as directed. When accepted, mock-up shall serve as the standard for materials, workmanship, and appearance for such work throughout the project. Approved samples will not be returned for installation into project.

B. Work-In-Progress Approvals: Scheduled or unscheduled viewings at the shop or factory may be initiated as deemed necessary to ensure continued quality control and make any adjustments required during fabrication. Unsatisfactory items are to be corrected by the Sign Fabricator as directed. All subcontractors shall be identified; contact names, numbers and addresses shall be provided with reference to sign types they will be fabricating.

C. Source Limitations: Obtain each material type, shape or size from one source from a single manufacturer.

D. Materials: Cut all required faces, trim, or continuous surfaces from a single piece of base material unless overall size cannot be obtained from a single piece due only to its size. Materials shall be new, un-used in any previous work, free of imperfections of surface, substance, manufacture, or damage from shipping or handling. Materials shall be utilized in the fabrication process only for the purpose intended by the original manufacturer or supplier.

1.4 REGULATORY REQUIREMENTS

A. Comply with applicable requirements of the laws, codes, ordinances and regulations of Federal, State and Municipal authorities having jurisdiction, include state and federal ADA requirements as applicable. Obtain necessary approvals and permits from all such authorities as required.

B. Interior Code Signage: Provide signage as required by accessibility regulations and requirements of authorities having jurisdiction. These include, but are not limited to, the following:
a. Fire Doors: Fire Marshal of Washington, District of Columbia
b. Room Capacity: Fire Marshal of Washington, District of Columbia
c. Elevator Signs: Building Department of Washington, District of Columbia
d. Stairway Identification: Fire Marshal of Washington, District of Columbia
e. Live Load Capacity: Fire Marshal of Washington, District of Columbia
f. Signs for Accessible Spaces: Building Department of Washington, District of Columbia
g. Electrical signs: UL Listed components as required

1.5 QUALITY OF WORKMANSHIP

A. Sign Fabricator: The Sign Fabricator shall be responsible for the quality of all materials and workmanship required for the execution of this contract including materials and workmanship of any firm or individual who act as Sign Fabricator's sub-contractor. Sign Fabricator shall be responsible for providing up-to-date drawings, specifications, graphic schedule, etc., to all sub-contractors. Sign Fabricator shall provide a supervisor who will be assigned for the duration of the project.

B. Installer Qualifications: Sign Fabricator shall provide workers trained and supervised by signage manufacturer. An authorized representative from the Sign Fabricator shall be present for the duration of the on-site installation.

C. Fabrication Qualifications: Fabrication and installation shall be conducted by trained individuals working under the direct and continual supervision of the Sign Fabricator or sub-contractors as disclosed on the bid form. All materials shall remain under the direct control of the Sign Fabricator or his disclosed sub-contractors during the entire fabrication and installation process.

D. Templates: Templates will be required for certain sign items noted on design drawings. Templates must be created only after complete installation of finish surfaces to receive installed sign.

E. Sign Locations: Sign locations shall accommodate full door swing where applicable, in addition to required mounting height and position requirements.

F. Dimension: Written dimensions on drawings shall have precedence over scaled dimensions. Sign Fabricator shall verify and be responsible for all dimensions and conditions shown by these drawings. Shop details must be approved prior to fabrication.

PART 2 - PRODUCTS

2.1 CHARACTERS AND LETTERING

A. The Sign Fabricator shall be responsible for the quality control of all characters and lettering. All characters shall be crisp, sharp, free of nicks, ragged edges and discontinuous curves. Letterforms with burrs, saw marks, rounded positive or negative corners, nicked, cut, or ragged edges, etc., will not be accepted. All letterforms shall be so aligned as to maintain a baseline parallel to the sign format unless otherwise indicated in the Design Intent Documents. Margins must be maintained as specified in Design Intent Documents.

B. All characters and lettering shall conform to approved typeface, weight and letterspacing. No substitutions of typeface foundry, brand or version or implementation technique will be accepted without prior approval.

C. Cutout Characters: Cut characters from solid plate of thickness and metal indicated. Produce precisely cut characters with square cut, smooth edges.

D. Fabricated Characters: Fabricate letters and numbers to required sizes and styles, using metals and thickness indicated. Form exposed faces and sides of characters to produce surfaces free from warp and distortion. Include internal bracing for stability and attachment of mounting accessories.

2.2 ILLUSTRATION, PHOTOGRAPHY, IMAGERY, ARTWORK AND OTHER GRAPHICS

A. Vinyl Die Cut Graphics: All precision machine-cut vinyl typography or graphics shall be executed in such a manner that all edges and corners of finished letterforms are true and clean. Cut-out characters from vinyl film of nominal thickness of 3 mils (0.076 mm) with pressure-sensitive adhesive backing. Apply copy to exposed face of panel sign, or glass surfaces. Apply protective, ultraviolet-inhibiting, clear coating to vinyl characters applied to any painted surface. The application of all vinyl characters shall be smooth, free of air bubbles, ridges, creases, distortion or other imperfections. Application technique must follow manufacturers recommendations. Surface coating shall dry for a minimum 4 days (medium humidity) prior to application of vinyl graphics. Avoid air pockets caused by out-gasing or curing of the base coating upon which self-adhesive vinyl is applied.

2.3 SIGN MATERIALS

A. Adhesives: Contact adhesive or foam tape, shall be used in conjunction with silicone adhesives for installation of wall signs, in minimum thicknesses required. Use vertical bands of double-sided foam tape to mount signs to smooth, nonporous surfaces. Do not use this method for vinyl-covered or rough surfaces unless otherwise indicated. Use liquid-silicone adhesive recommended in writing by sign manufacturer to attach signs to irregular, porous, or vinyl covered surfaces. Use double-sided vinyl tape where recommended in writing by sign manufacturer to hold sign in place until adhesive has fully cured.

B. Metals, General: Standard thickness for all sheet/panel surfaces shall be .125" minimum unless otherwise noted. Contractor shall recommend and use material thickness sufficient to prevent any waviness, "oil canning" or warping of the surface. Remove tool and die marks and stretch lines or blend into finish. Grind and polish surfaces to produce uniform, directionally textured, polished finish indicated, free of cross scratches. Run grain with long dimension of each piece. When polishing, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

C. Metals, Aluminum: Aluminum shall be suitable for ornamental, architectural work. Surface finish shall be smooth, free of extrusion marks or imperfections. Alloy shall be selected to meet the structural requirements of the specific application. Aluminum shall not directly contact any other materials. Contact surfaces are to be insulated with a zinc-chromate coating, bituminous paint, or a gasket.

D. Metals, Stainless Steel: Stainless steel shall be suitable for ornamental and architectural work. Surface finish shall be smooth, free of all extrusion marks or imperfections. Alloy

shall be selected to meet the structural requirements of specific application.

E. Fasteners: Bolts, nuts, screws, washers, anchors and other devices required to complete the work. Same basic metal or alloy as the metal fastened, and finished to match in color and texture. Stainless steel alloy shall be used to join dissimilar materials. Use of exposed fasteners is prohibited unless otherwise indicated on the design drawings. Use of fasteners, anchors, adhesives and other attachments shall be in accordance with requirements and recommendations of the manufacturer of the device or material.

F. Foam Tape: Provide concealed black polyurethane foam tape or "Isotac" laminate tape as manufactured by 3-M, applied to sign elements as required.

G. Vinyl Die-Cut And Pattern Cut-Out Graphics: Use pressure-sensitive, non-yellowing, non-peeling and weather resistant vinyls as specified. Use approved fonts and equipment as specified.

2.4 FINISHING MATERIALS

A. Coatings shall be compatible with the surface to which they are applied. Finish applications are to be smooth and uniform, free of "orange-peel" or other irregularities, applied according to manufacturer's recommendations.

B. Brushed and satin finished aluminum surfaces are to be consistent and uniform among all the signs of the system.

C. Clear Sealers: Crystal clear matte polyurethane sealers By Matthews Paint Co. or approved equal. Sealers are to resist rust and corrosion associated with exposure to salt air. As required and of highest quality available, applied per manufacturer's specifications.

D. Protection: Protect mechanical finishes on exposed surfaces from damage by applying strippable, temporary protective covering before shipping.

E. Variations: Variations in appearance of abutting or adjacent pieces are not acceptable. Noticeable variations in same piece are not acceptable. Variations in appearance of other components are not acceptable.

F. Anodized Aluminum Components/Panels: If required provide anodized (application of aluminum oxide film coating in clear or colored dye finish) aluminum panels or parts to match specified color, grain, finish and specifications.

2.5 FABRICATION OF SIGNS AND SUPPORTS

A. General: Provide custom manufactured sign assemblies, components completely fabricated and finished at factory before delivery to site. Construct to accurate detail and dimensions as shown in Design Intent Documents and as reviewed on shop drawings. Fit and assemble the work at shop to the greatest extent possible, and mark the components

as required to facilitate assembly during installation. Fabricated and assembled materials, prior to painting and finishing shall be free of imperfections, roughness, burrs, open joints, misalignment of components, surface irregularities, pits, piping, or any other substandard feature or condition.

B. Seams and Joints: Added joints shall be ground filled and finished flush and smooth with adjacent work. Such seams shall be invisible after final finish has been applied. Spot welded joints shall not be visible on exterior of signs after final finish has been applied. No gaps, light leaks, waves, or oil canning will be permitted in work.

C. Metal Signs and Supports: Fabricate exposed surfaces uniformly flat and smooth, without distortion, pitting, or other blemishes. Form exposed metal edges to a smooth radius. Permanently bond the laminated metal components and honeycomb core with adhesive or sealant in accordance with product manufacturer's recommendations. Grind exposed welds and rough areas to make flush with adjacent smooth surfaces.

D. Castings: Exposed surfaces shall be uniformly free from porosity, roughness, pits, sand holes, and other defects. Edges filled and ground smooth. Faces chemically etched and mechanically polished for specified finish. Castings shall be of alloy and temper recommended by sign manufacturer for casting process used and for type of use and finish indicated. Concealed studs will be used unless otherwise indicated.

E. Galvanizing: Provide for steel components in exterior construction, and where noted to be galvanized. Complete the shop fabrication prior to application of the zinc coating. Remove mill scale and rust, clean and pickle the units as required for proper pretreatment of the surfaces.

F. Hardware: Provide all incidental hardware necessary for the proper functioning of signs. External hardware shall conform to the external appearance of the sign.

G. Support, Backing and Blocking: Sign Fabricator shall provide engineered sign supports anchored to building structure where required and to meet requirements of applicable building codes. Support or backing requiring installation within the building wall construction shall be immediately relayed to the Owner for field coordination. Furnish templates for installation of anchorage devices.

2.6 SHOP APPLICATION OF SIGN FINISHES

A. Sign Graphics: Provide the letters, numerals, symbols, and other graphics markings, using the finish materials shown. Apply the graphics neatly, uniformly proportioned and spaced, and accurate within the dimensions indicated. Prepare the substrate surfaces and apply finish materials in accordance with manufacturers' instructions.

B. Metal Finishes: Remove scratches, abrasions, dents and other blemishes before applying finish. Apply relevant finishes to the fabricated work, with texture and reflectivity as specified in Design Intent Documents.

C. Linear Polyurethane Finishes: Clean the surfaces as required for proper adhesion of coatings. Use cleanser and water, and/or chemically treat as recommended by paint

manufacturer to remove deleterious film or residue. Provide pretreatment and primer in accordance with manufacturer's recommendation.

2.7 GRAPHIC APPLICATION

A. Preparation: Surfaces to receive the graphic markings shall be clean, dry, and otherwise made ready for application of the materials. Accurately measure and lay out the required marking configurations as indicated on drawings.

B. Vinyl Die-cut and Pattern-cut Graphics: Use die cut, pressure sensitive, non-yellowing, non-peeling and weather resistant vinyl adhesive letters or images, custom flood coated as required. Apply in strict accordance with manufacturer's instructions. Make uniformly smooth and free from bubbles, wrinkles, stretching and blemishes.

C. Acid-Etched Graphics and Typography: Acid-etched typography and graphic imagery must be clean, crisp, sharp edges; ragged or soft (polished out) edges will be rejected. Acid baths used for etching should be fresh and used in an environment and temperature that will provide the highest quality etched images. Infill with color as indicated by Design Intent Documents. Maintain ink fills true to the edges of letterforms/graphics. Etch to depth indicated in Design Intent Documents.

PART 3 - EXECUTION

3.1 GENERAL

A. Protection: Protect the work during the construction period so that it will be without any indication of use or damage. Leave the work clean and free from defects at time of acceptance.

B: Final Walk-Through and Punchlist: Final walk-through will be held with Project Architect and Owner to review the finished installation. A punchlist of all items requiring modification will be developed and issued. Project Architect and Owner reserve the right to reject all or part of a sign that does not correspond to the Design Intent Documents, specifications or the approved shop drawings. Sign Fabricator shall promptly conduct repair and completion of all items for final acceptance by the Owner.

C. Guarantee: Sign Fabricator to provide full guarantee of all workmanship, materials, equipment, etc. of this installation for a period of one (1) year after final acceptance. Sign Fabricator shall replace/repair any defective work within thirty (30) days after notification by Owner throughout the duration of this period.

D. Fabrication Errors: If the Sign Fabricator has made an error in copy (message), color, material, quality, etc. these items must be corrected within thirty (30) days of observation of error (at no additional cost). Sign Fabricator will be notified with a written punchlist as errors are discovered.

E. Erection of Signs: Set and attach the work accurately in location, alignment and elevation, plumb, level and true, as measured from established reference points and from other work already in place. Fit components accurately together to form tight joints and secure connections. Coordinate, through the Construction Manager, with other trades and

make connections of illuminated signs to electrical service. Exterior wall penetrations and blocking are to be coordinated immediately upon award of contract. Test illuminated sign components and adjust operation for proper performance.

F. Adjusting: Neatly repair minor blemishes or marring on finished surfaces so that repairs are imperceptible. Completely replace components having permanent non-removable scratches, stains, or other defacement.

3.2 EXAMINATION

A. Verification of Conditions: Sign Fabricator must examine the areas to receive the work and the conditions under which the work will be performed. Prior to commencing work, verify that items, including anchor inserts, and electrical power provided are sized and located to accommodate work. Sign Fabricator shall remedy conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

B. Pre-Installation Meeting: A pre-installation meeting will be held with Project Architect and Owner to mutually agree on all installation details, placement, etc.

3.3 INSTALLATION

A. General: Complete installation shall be in accordance with manufacturers' printed instructions and accepted shop drawings and best industry practice. Sign Fabricator will be responsible for daily clean-up of their areas of work. Locate signs and accessories as indicated in Design Intent Document, using mounting methods of types described and in compliance with manufacturer's written instructions and best industry practice. Install signs level, plumb, and at heights indicated, with sign surfaces free from distortion and other defects in appearance.

B. Shim Plate Mounting: Provide concealed aluminum shim plates with predrilled and countersunk holes, at locations indicated, and where other mounting methods are not practicable. Attach plate with fasteners and anchors suitable for secure attachment to substrate. Attach signs to shim plate using mechanical fasteners or adhesives as indicated in Design Intent Documents. Where shim plate is exposed, provide a decorative cover as required.

C. Mechanical Fasteners: Use non-removable mechanical fasteners placed through predrilled holes. Attach signs with fasteners and anchors suitable for secure attachment to substrate as recommended in writing by sign manufacturer, engineer, or best industry practice.

D. Bracket-Mounted Units: Provide custom brackets, fittings, and hardware as appropriate for mounting signs that project at right angles from walls and ceilings. Attach brackets and fittings securely to walls and ceilings with concealed fasteners and anchoring devices to comply with manufacturer's written instructions, engineer, or best industry practice.

E. Dimensional Characters: Mount characters using standard fastening methods, type of mounting, wall construction, and condition of exposure indicated. Provide heavy paper template to establish character spacing and to locate holes for fasteners.

F. Cast-Metal Plaques: Mount plaques using standard fastening methods recommended in writing by manufacturer for type of wall surface indicated.

END OF SECTION 10400